INTERSTATE MEDICAL JOURNAL.

VOL. XII. FEBRUARY, 1905. No. 2.

ORIGINAL ARTICLES.

INTRODUCTION TO THE SEMEIOLOGY OF DISEASES OF THE NERVOUS SYSTEM—SYMPTOMS WHICH CANNOT BE INDUCED BY THE WILL, AND THEIR MEDICO-LEGAL IMPORTANCE—A LECTURE DELIVERED AT L'HOPITAL DE LA PITIE.*

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TRANSLATED FROM THE AUTHOR'S ORIGINAL MANUSCRIPT BY CHARLES GILBERT CHADDOCK, M. D.

GENTLEMEN:—On commencing the series of lectures that I propose to give this year I must first indicate my plan. As far as possible, my intention is to eliminate from my teaching all questions that can be studied as well in books as in the hospital, and to confine myself to the province of clinical demonstration. I shall present to you a certain number of patients, uniting them when it is possible so to do in groups in a systematic manner, and while examining them in your presence I shall lay stress upon the technique to be employed in searching for and analyzing symptoms; in this way I hope to teach you semeiology, which is the foundation of clinical work. In my opinion, errors in diagnosis are much less frequently caused by false interpretation than by imperfect observation of symptoms; in other words, that errors are usually errors of semeiotics. The study of this part of neurology is, therefore, essential. It merits your closest attention, and it requires also, allow

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†A certain number of my lectures have been published in various journals without my consent, and even without submitting them to me; thus my ideas have not always been faithfully rendered, and certain errors have been made which might be attributed to me. In order to avoid any misunderstanding, I wish to state that the only articles the responsibility for which I accept entirely are the following:

(*a*) Anatomie pathologique des nevrites peripheriques (Gazette hebdomadaire de Medecine et de Chirurgie, August, 1890).

(*b*) Hypnotisme et Hysterie; du role de l'hypnotisme en therapeutique (Gazette hebdomadaire de Medecine et de Chirurgie, July, 1892).

(*c*) Du phenomene des orteils et de sa valeur semiologique (Semaine medicale, July, 1898).

(*d*) Diagnostic differentiel de l'hemiplegie organique et de l'hemiplegie hysterique (Gazette des hopitaux, May, 1900).

I desire also that hereafter it be understood that I am to be made responsible only for such lectures or lessons as have been edited or reviewed by me personally.

me to emphasize, long apprenticeship, unremitting work, just as do diseases of the lungs and diseases of the heart.

Symptoms may be divided into two categories—subjective and objective.

Subjective symptoms, as their name implies, are such as the physician cannot measure or investigate by his own senses, and which the patient alone perceives; pain and sense of fatigue, for example, are subjective phenomena. Usually it is for troubles of this kind that the patient seeks the advice of the physician, and ordinarily the physician must take them into accoun t in diagnosis, prognosis and treatment; but since there is no way of estimating them rigorously or of measuring them, and since even their reality can never be demonstrated, they deserve to occupy only a secondary place in semeiology. What I have just said will undoubtedly strike you as strictly true if you consider the diversity of symptoms which auto-suggestion and suggestion are capable of causing, or if you consider the fact that in many cases we may justly doubt the sincerity of the person we are called upon to examine. For example, take the case of an individual that has been injured and who asks the law to award him damages. He declares that he is in severe pain, that he can no longer work, that the slightest effort exhausts him, that his mind is enfeebled, that he cannot think connectedly, that his memory is enfeebled—in a word, that, aside from his suffering, he is no longer able to earn his living. The expert called to examine such a patient could not possibly give a scientific opinion of the condition if his conclusions were based simply upon such statements. In such a case the expert must limit himself to an enumeration of the statements of the interested patient, indicating, if it seem justifiable, the impression which the patient's statements have made upon him from the point of view of veracity; but he cannot guarantee their genuineness because it is impossible to testify concerning the nature of purely subjective phenomena.

Objective phenomena are such as the physician himself is capable of preceiving, the presence of which he notes, if he be a good observer, and in the appreciation of which he is in no sense at the mercy of the patient. It should be noted, however, that among these symptoms there are some which, properly considered, should be relegated to the first rather than to the second group, and which, in spite of appearances, have no great semeiologic importance. Paralysis, that is, loss of voluntary movement, is a symptom of this kind, at least when it does not present certain features which I shall try to indicate later. From some points of view paralysis may be considered as an objective sign; for example, if, after having raised the patient's limb and having told him to hold it up without support, it fall inert, naturally we have before us a fact which is seen, and which is, consequently, objective; but in reality this condition may depend entirely upon an idea, upon the state of mind of the subject under observation; it may be the result of auto-

suggestion or of simulation, which in themselves are merely subjective phenomena. Objective phenomena of the greatest value are those that cannot be induced by the will. Gentlemen, you cannot study these too attentively, for it is only by virtue of knowledge of such symptoms that you can make a diagnosis rigorously precise, and solve, either as experts or army surgeons, certain problems which have great social importance. In the following lessons I shall try to describe for you in the minutest manner the objective symptoms of this kind; to-day I shall limit myself to the review of them in demonstrating by some examples the preponderance of their role.

You are consulted by a patient who complains of having had, for some time, headaches which interfere with his usual occupation and prevent sleep; of loss of strength, gastric troubles—nausea and vomiting. What is the matter? Is it an organic affection or a purely neuropathic state—neurasthenia, hysteria—or a related condition? Of course, from the character of the subjective symptoms enumerated and the facts learned concerning the individual's history and his habitual state of mind and morals, you may be able to form an opinion that has some chance of being correct, but you can never do more than make a probable diagnosis, and you will reach no result without much careful questioning and painstaking investigation. If, now, examining the patient with an ophthalmoscope, you note the objective sign which characterizes edematous neuritis (disc), you are immediately enlightened, for these signs, it is hardly necessary to say, cannot be produced voluntarily. They have a weight incomparably greater than that of all the statements made to you; their presence allows you to conclude with certainty that there exists an organic intra-cranial lesion—cerebral edema, symptomatic of a neoplasm, no matter whether you are dealing with a patient whose good faith you have every reason to suspect—a simulator by profession. The ophthalmoscopic signs, for the reason I have just indicated, all have capital value. They indicate the existence of a lesion, and in many cases enable you to determine its nature. Indeed, an ophthalmoscopic anomaly constitutes more than a simple sign of lesion—it is a lesion of a portion of the nervous system, of the optic nerve, which can be determined during life, thanks to the aid of the ophthalmoscope. Besides, it permits a conclusion concerning the existence of a more extensive affection of the nerve centers. Again, when we consider that ophthalmoscopic anomalies are very frequent manifestations in common affections of the nervous system—syphilis, tabes, which is nothing but a form of nervous syphilis; certain intoxications, particularly alcoholic; insular sclerosis, which is probably due to an infection or an intoxication—we are led to the conclusion that the study of ophthalmoscopy becomes the duty of the neurologist.

I have said that paralysis could be induced by the will, but so induced it always wants certain particular characteristics. I wish to enlighten

you immediately, in part, on this subject by considering this law: that the will cannot induce paralyses identical with those which depend upon organic alterations of nervous tissue. Consider, for example, radial paralysis (musculo-spiral); certainly, wrist-drop may be voluntarily induced, and it is possible to simulate lack of power to extend the fingers on the hand and the hand on the forearm; but that which no one can do is to dissociate at will, as does involuntarily the patient suffering with radial paralysis in energetic flexion of the forearm on the arm, the contraction of the anterior muscles, and that of the long supinator. Cause the patient in question to make this movement, and you will note that the long supinator remains flaccid, while in the normal individual you will note the prominence of the supinator whenever the biceps is energetically contracted.

Let us borrow other examples from ocular pathology, the importance of which we have already had occasion to note, and which in so many respects is of the greatest interest in neurology. Paralysis of the third pair, as well as of the sixth pair, causes, among other symptoms, some that may be imitated by the will; for example, diplopia, which may be a subjective phenomenon, and which in reality makes it impossible for the patient to move the eye in this or that direction—a condition which may be simulated to a certain degree; but, beside the fact that complete paralysis of the third pair causes mydriasis and immobility of the pupil which cannot possibly be induced by the will, simulated diplopia can be easily determined by tests made with colored glasses; but, moreover, paralysis of the motor oculi, even when it is partial—for example, when it affects the internal rectus, and peripheral paralysis of the sixth pair—causes a degree of strabismus which appears generally in a state of rest, probably owing to a tonic action of the antagonist deprived of counter-resistance; and this strabismus is accentuated when the patient attempts to look at an object placed on the side of the paralyzed muscle, because under such circumstances the normal eye alone moves. Such strabismus cannot be induced mentally, for the will exerts no action on muscular tone, and the will cannot unyoke the associated movements of the two eyes. This disturbance of synergy of the internal rectus and the external rectus, is an objective sign of still greater importance, because it makes it possible to distinguish a paralysis of the sixth pair due to a peripheral lesion, from that caused by a lesion of the nucleus of this nerve; for, although with lesion of the nucleus there is strabismus, this anomaly is not increased when the patient attempts to look toward the paralyzed side. This phenomenon doubtless is due to the fact that the nucleus of the sixth pair sends some nerve fibres to the internal rectus of the opposite side, and consequently the nuclear paralysis of the external rectus of one eye is thus associated with a paresis of the internal rectus of the other eye. Here is a patient, the analysis of whose symptoms will permit you to note the interest which attaches, from a

diagnostic point of view, to paralyses of the motor oculi and dissociation of movements which normally take place with synergy. This woman is subject to attacks that are manifestly hysteric. She was sent to me by a physician who, having noted, a short time after one of her attacks, facial asymmetry, thought that the condition was one of hemispasm of hysteric nature. You can see that the right labial commissure in repose is at a higher level than the left commissure, and that this condition is increased when the patient brings the muscles of the face into action; when she speaks, the right commissure is drawn markedly upward and outward, and the lines of the face are very marked on the right side, as if on that side there were spasmodic action of the muscles. But we must determine whether this facial asymmetry is really due to spasm or to paralysis of the face; in fact, you must be struck by this characteristic, hardly to be observed in hysteric hemispasm; namely, that when the patient is told to close her eyes, the right eye alone is shut. This lack of closure—is it dependent upon paralysis of the orbicularis? How shall we answer this question? The simple fact that the patient does not shut an eye when told to do so, is in no sense characteristic, for such a condition may be due to volition; but, on examining the patient attentively, it will be seen that she tries to close her eyes. You will note that the left eyeball is moved forcibly upward while the eyelid remains immovable. This phenomenon, known as Bell's sign, is due to an association of alterations of the facial nerve with integrity of the motor oculi, and it permits us to decide that the patient is suffering with paralysis and not with spasm; and, besides, we can state with certainty that this paralysis is not psychic, for this dissociation of movement, this variety of asynergy, cannot possibly be imitated.

There is one kind of asynergy related to a lesion of the region associating the medulla, the pons and the cerebellum, concerning which I cannot now go into detail, but which I shall consider in a lesson to follow, and which presents various characteristics which it would be difficult or impossible to imitate voluntarily. I now call your attention only to a disease which seems to be a form of this asynergy located in the ocular apparatus—I refer to nystagmus, which often accompanies nuclear paralysis of the sixth pair, and which cannot be simulated.

I have previously stated that in complete paralysis of the third pair the pupil is immobile, and this means that reflex movements are wanting. But abolition of the reflex to light may also be observed in two other different conditions. On the one hand, it may exist independently of any other ocular disturbance, and then, when it is permanent, it is a sign of great value. This form of the abolition of the reflex to light may be subdivided into several subsidiary varieties. Sometimes it is associated with myosis and with retention of a movement of the pupil, which is usually, but erroneously, called the reflex of convergence. This subvariety, note particularly, is the only one known as the sign, or, better,

the syndrome, discovered by Argyll-Robertson. Sometimes it is associated with mydriasis. Under such circumstances, generally, the reflex of convergence is abolished, and in certain cases even the pupillary disturbances are accompanied by a paralysis of accommodation—internal ophthalmoplegia. Sometimes the pupil is diminished in size, and the reflex of convergence is, under such circumstances, sometimes present, sometimes absent; but no matter with what subvariety we have to do, abolition of the reflex to light, under the circumstances I have noted, seems to be pathognomonic of acquired or hereditary syphilis (Babinski and Charpentier), and, to be more precise, of acquired syphilitic meningitis (Babinski and Nageotte). I consider this the most remarkable sign of all the signs of neurologic semeiology, because it may be the only manifestation of a meningial affection capable of leading up to tabes, general paralysis or disseminated syphilis of the nerve centers. It is a characteristic manifestation; it gives precise indications for treatment, and that so early that mercurial treatment may be given efficaciously; and the most important point is that it cannot be voluntarily induced.

Thanks to the cytologic examination of the cerebro-spinal fluid, Nageotte and myself were able to establish the fact that this sign is intimately related to meningitis, for it is always associated with lymphocytosis of the cerebro-spinal fluid. This leads me to say that as a result of the important work of Widal and his students on the cytology of the cerebro-spinal fluid, we have grown familiar with certain objective characteristics which permit us to recognize with certainty the existence of inflammation of the meninges. The presence, the number and the nature of the elements (lymphocytes, polynuclear cells, etc.,) contained in the fluid, its composition (fibrin, albumin, chromophilic substances), give to science a diagnostic element of the greatest importance. But I must say of these characteristics what I have already said concerning ophthalmoscopic symptoms—they are more than signs of lesions; they constitute a lesion itself of a part of the nervous system, a lesion of the meninges that can be determined during life.

To return to the semeiology of the pupil. Generally, inequality of the pupil is regarded as important, but in reality, as a monosymptomatic condition, it does not seem to have any clinical value, nor has it any value when it coincides with immobility of the pupils, which alone, under such circumstances, should be taken into consideration. It is interesting under the following circumstances: the pupils being unequal, and both contracting well to light, one is normal, the other is contracted; on the side of the smaller pupil there is also retraction of the palpebral fissure and enophthalmia. This triad of symptoms, syndrome, brought to light by Claude Bernard and Hutchinson, is characteristic of a lesion of the cervical sympathetic, either in the trunk of the nerve or at its origin in the cord, or in the medulla; and neither the imagination nor suggestion nor simulation can induce it.

I need scarcely add that the inverse symptom of enophthalmia, namely, exophthalmia, which is one of the manifestations of Basedow's disease, cannot be produced voluntarily.

Finally, there is a nervous affection, diphtheritic intoxication of the nervous system, that often causes a form of ocular disturbance which is particular to it; namely, double paralysis of accommodation, coinciding with integrity of movements of the pupils. Of course, a disturbance of this kind can be feigned, for to determine the existence of this phenomenon intervention of the will of the subject under observation is required, and false statements under such circumstances might lead the physician to err; but with the aid of certain practical tests with special lenses, it is easy to detect simulation and to demonstrate paralysis of accommodation, which may, therefore, be considered as an objective sign of great value. From the various examples I have chosen, you see that ocular pathology furnishes neuropathology a large number of objective signs of capital importance.

The pathology of the larynx is much less important for a neurologist; however, under certain circumstances, laryngoscopic examination may furnish very useful information. Let us suppose that we have a patient thought to be neuropathic, hysteric; who presents disturbances of phonation, and the question arises whether we have not to do with hysteric dysphonia. If paralysis of one vocal cord is observed, a paralysis the characteristics of which cannot be induced by suggestion, it can be stated that, if hysteria be concerned in the genesis of the accidents, nevertheless it plays a role of secondary importance, and that we have to do with an organic affection of the nervous system.

You know very well that an examination of the tendon reflexes is a matter of routine practice in neurologic examinations. In fact it is essential to know the state of the reflexes because they are subject to disturbances in many nervous maladies, and they furnish indications of fundamental importance in diagnosis. Abolition of the tendon reflexes is characteristic of a lesion of the nervous system, and this is foreign to the symptomotology of hysteria. It was Westphal and Erb who first and simultaneously called attention to the absence of the knee-jerk in tabes: this phenomenon is also to be observed in neuritis and in anterior poliomyelitis. But I wish you to note that the knee-jerk, which is the only one that many physicians investigate, is not the only one that presents disturbances of interest. Absence of the ankle-jerk in certain cases makes it possible to distinguish sciatic neuritis from pseudo-sciatica of hysteric nature (Sternberg, Babinski, and Biro). Besides, it is one of the most valuable signs of tabes, appearing generally before the sign of Westphal (Babinski). Exaggeration of the tendon reflexes has no less value than abolition of them. In a case of crural paralysis the bilateral exaggeration of the tendon reflexes of the lower limbs, characterized particularly by foot-clonus, demonstrates the existence of an organic

affection, for these symptoms cannot be produced by hysteria; at least this is the opinion that I have maintained for ten years and it now seems to be quite generally accepted. It is the same in a case of hemiplegia. In a patient afflicted with hemiplegia, we observe on the paralyzed side exaggeration of the knee-jerk, the ankle-jerk, and the elbow-jerk, as well as of the bone reflexes at the wrist. This state of affairs alone permits the conclusion that you have to do with an organic hemiplegia, for hysteria cannot induce it (Babinski).

In relation to hemiplegia, permit me to mention various characteristics that I have discovered which may also aid in distinguishing organic hemiplegia from hysteric hemiplegia: muscular hypo-tonicity, combined movement of flexion of the thigh and pelvis, the sign of the platysma, the peculiar grip of the hand (*vide* Lecon sur le diagnostic differentiel de l'hemiplegie organique et de l'hemiplegie hysterique, *loc. cit.*).

Formerly the cutaneous reflexes were considered of mediocre importance; however, it has long been known that abolition or weakening on one side of the cremasteric and abdominal reflexes (Rosenbach) occurred in organic hemiplegia. We now know that cutaneous reflexes are of the greatest semeiologic importance. I have shown, and my opinion to-day is almost universally confirmed, that the cutaneous reflex of the sole of the foot undergoes ordinarily a change when there is disturbance in the pyramidal tracts; the great toe, instead of flexing normally, is moved in extension when the sole of the feet is irritated; and not infrequently, the toes are separated one from another (fan-sign). These phenomena are never observed in cases of purely hysteric paralysis.

I foresee an objection which you may make. You may say that the simulator could produce the signs that I have just mentioned. A person with normal or abolished knee-jerks might, if the tendon were struck, execute voluntarily a movement of extension of the leg on the thigh and cause the observer to conclude that the reflex were exaggerated; and inversely, the patient with exaggerated or normal reflexes might prevent the movement that should follow percussion of the tendon by voluntarily contracting the flexor muscles of the thigh and thus suggest the conclusion of abolition of the reflexes; likewise, extension of the great toe, after excitation of the sole, might be due to volition. In reply to these objections, I will say that these various signs may in fact be simulated, but under such circumstances the simulation is imperfect and not an exact reproduction; for on taking special care in analyzing these disturbances, and by studying attentively the various characteristics which belong to them, as I shall do in succeeding lessons, we always succeed, when we have experience, in distinguishing the true from the false.

The disturbances of electric excitability of the nerves and muscles offer signs of much interest from the present point of view. Doubtless you all know that the reaction of degeneration is pathognomonic of a lesion of the muscles, due to a primary or secondary alteration of

nerves; and none of the characteristics which belong to it—abolition of electric excitability of the nerves; abolition of faradic contractility (Duchenne de Boulogne); increase of muscular excitability to galvanism (Baierlacher); slowness of contraction (Remak); inversion of the normal formula (Erb)—can be voluntarily induced. Compression of a motor nerve that does not lead to degeneration of its peripheral portion may cause a modification of its electric excitability, less than the reaction of degeneration and still as remarkable and equally impossible of voluntary simulation. It consists of this: the nerve above the point of pressure loses its electric excitability, while below this point it retains its normal reaction (Erb). This is ordinarily observed in common musculo-spiral palsy.

Finally, I would draw your attention to the disturbances that are due to auricular lesions expressed in alterations of normal galvanic vertigo. These objective phenomena are unknown to the majority of physicians, yet they are of great practical importance. For example, a patient states that he has grown deaf; the aurist finds no lesion of the external or middle ear, and he has no means of determining whether the deafness is really due to an organic affection of the labyrinth or whether it is hysteric or simulated. If in such a case, with a current of fifteen or twenty milliamperes, there is neither inclination nor lateral rotation of the head, it may be said with confidence that there is a lesion of the labyrinth and that the possibility of hysteric or simulated deafness must be abandoned (Babinski). And the same conclusion would be justifiable in a case of unilateral deafness if inclination or rotation took place only toward one side, without reference to the direction of the current, or if it predominated decidedly to one side (Babinski).

Trophic disturbances and circulatory and secretory anomalies also afford elements for diagnosis of the greatest importance. It is unnecessary to insist upon the value of eschars, arthropathies, scoliosis and amyotrophy, especially when the latter is well marked and is accompanied by fibrillary twitching. Moreover, like ophthalmoscopic anomalies and lymphocytosis, these are more than signs; they are lesions symptomatic of nervous disturbances which cannot be simulated. We can say almost as much of certain circulatory and secretory anomalies. If, for example, in a case of monoplegia, monoparesis or of neuralgia in one of the lower extremities, it is noted that the leg implicated is colder than the other, that the perspiration is more abundant and the skin presents a bluish-red color, it may be affirmed that the affection is an organic one, implicating the cord or the nerves. There are still other circulatory disturbances which constitute one of the most characteristic signs of the epileptic attack, and which enable us to distinguish the latter from hysteric attacks. It is usually taught that the initial cry, the sudden fall, the complete loss of consiousness, the biting of the tongue, the presence of bloody froth on the lips, the emission of urine and the con-

secutive exhaustion, are symptoms which belong exclusively to the epileptic attack, and in fact they are of great value in diagnosis and in most cases can be utilized. But if we reflect a moment, we shall see that all these symptoms may be simulated by a person who has seen epileptic attacks and who might have a reason for deceiving the physician; however, there are signs which, without being constant, are remarked in the epileptic attack, and which are vastly more important than the preceding, for they are never observed in the hysteric attack and they cannot be simulated. These are the toe-phenomenon, of which I have already spoken, and the circulatory disturbance, namely, lividity of the face and more especially of the lips. But do not make a mistake. Simple congestion of the face during an attack should not lead to a diagnosis of epilepsy, for such a condition may result merely from voluntary effort. The circulatory disturbances must be marked; the lips must be of a leaden hue. Thus, you see, the trophic and circulatory disturbances are of great value from our point of view. Note, however, that there are some cutaneous lesions which may be due to diseases of the nervous system or to some external cause. Suppose that you have to deal with a patient who complains of violent pain in an arm or a leg and that you remark that the limb is edematous or that it presents certain eruptions. Be careful in such a case not to certify, without careful examination, that you have to deal with an organic nervous affection, for it is possible that you have before you a case of simple simulation. In fact, it is very easy to induce edema artificially by compressing the limb or allowing it to hang in a dependent position for a long time, and to cause vesication by the application to the skin of irritating substances.

I said in relation to the epileptic attack that the emission of urine, during the attack, could not be considered as a distinguishing sign, for it is a phenomenon that may be due to volition; and what I said concerning epilepsy is also applicable in general to all cases in which emission of urine is noted and seems to be involuntary. In order to avoid any misunderstanding, I must express myself more at length on this point. I know very well, of course, that incontinence of urine is a pathologic phenomenon of great value, but I would call your attention to the fact that the mere declaration of an interested individual, or even a discovery of clothing wet by urine, cannot be regarded as demonstrative; for, under such circumstances, there is nothing which shows that the emission was involuntary. In order to confirm and to certify to the fact, it is absolutely necessary to do what is usually not done, and moreover, what cannot always be done; that is, to determine that the emission presents characteristics which the will is incapable of imitating. If, for example, on examining the patient nude, the urine is seen to pass not in a jet but drop by drop, as it were by gradual accumulation, it may be stated that the phenomenon is objective and due neither to suggestion nor simulation, but that there is true incontinence of urine.

I hope that I have convinced you of the importance of being thoroughly familiar with objective symptoms that the will cannot induce. It is of capital importance in legal medicine where important interests may be at stake, especially when, in giving expert testimony concerning an accident, it is necessary to determine in the individual under observation whether he is suffering with organic nervous disorders; it is also of great importance when the problem which presents itself so often clinically, is one where it is necessary to distinguish hysteric manifestations from those due to lesions of the nervous system.

Do not forget, however, that even though you have demonstrated the presence of one or more of these signs in the patient, you are not justified in excluding simulation or auto-suggestion of a certain degree. You must know, in fact, that the association of hysteric and organic conditions is very common. The instances of this kind are complex, and in such cases it is often difficult, or even impossible, to determine exactly the share of each of these factors in the genesis of symptoms. Therefore it is even more essential to be able to determine with exactness the existence of the disturbances that cannot be engendered by the will.

As I have already said, in succeeding lessons I shall do all I can to demonstrate to you the precise characteristics of all the objective phenomena to which I have alluded, and the technique necessary in examining for them.

In conclusion, permit me to give you a final bit of advice. Examine systematically for the various objective signs, at least in the majority of cases you are called upon to examine or treat. When once you have become habituated to this, you will do it mechanically and rapidly. Thus you will often discover, much to the advantage of your patient, anomalies that otherwise would have passed unnoticed. Usually you will be able to make precise diagnoses, and, at all events, if you proceed in this way you will avoid gross errors that might be prejudicial to your reputation, and, what is still graver, errors that might do harm to those who have placed confidence in you.

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A CASE OF SEPSIS POST ABORTUM.*

By Ernst Jonas, M. D., St. Louis.

The case I desire to present seems of interest for many reasons of practical importance: Mrs. Fannie F., Hungarian, came under my observation in the Jewish Hospital of St. Louis on April 16, 1904. Family history—Negative. Previous history—Patient eighteen years of age, married seven months, never sick before. She menstruated for the first time when twelve years old, and regularly and without much trouble from that time until four months ago. Since then the menstruation has not returned. Patient imagined herself pregnant, felt as well as ever, had none of the usual complaints of pregnancy.

Present Illness.—A week before admission to the hospital the patient noticed a hemorrhage out of the vagina. The cause given for this hemorrhage was the sudden meeting with a negro at the entrance of a dark alley. Patient was frightened, fell to the sidewalk and commenced to bleed. She went to bed and soon afterwards felt a slight contracting pain in the lower part of the abdomen. About two days after the fall in the street the patient noticed a piece of flesh, about three inches in size, coming from the vagina. She handed it to the attending physician, who declared it to be the fœtus. The attending physician and a consultant examined the patient very thoroughly, as she said, ordered douches and prescribed medicine. When, however, four days after this, patient began to have fever and was seized with a severe chill, she sent for another doctor. I heard from this latter doctor, personally, that he found patient in a chill with high fever. Late at night he removed a foul placenta, as he said, from the cervix, gave her a disinfecting douche, ordered several things for her apparently septic condition, and sent her to the hospital next morning.

Physicial Examination.—The first impression: Patient looks *sit venia verbo*, septic; skin feels hot and has slight icteric tinge; great malaise is apparent; the tongue is brown and parched, the pulse is quick and somewhat feeble. Patient complains of loss of appetite, great restlessness, absolute want of sleep. Patient is of medium size, well developed. Pulse 120, regular but feeble; heart-sounds, clear. Temperature is 103.2.

Respiratory System.—Negative, but breathing is rapid, thirty-five per minute. No pain in chest, no cough.

Blood Examination.—Marked leucocytosis, 20,000. Hemoglobin, 85 per cent.

Urinary System —No urinary complaints. Urine, sp. gr. 1020; acid, clear, no albumen, no casts, no blood, no pus, no sugar.

Abdominal Examination.—Abdomen does not appear bloated, is not tender; there is no pain on pressure, except tenderness on deep pressure

*Read before the St. Louis Surgical Club.

in the hypogastric region. No abdominal dullness on percussion anywhere. Liver and spleen dullness, normal.

Digestive Organs.—No vomiting; diarrhœa.

Vaginal Examination.—Some foul reddish discharge. No bleeding. The vagina appears softer, more capacious, its mucous membrane of dark bluish hue. The external os and the whole cervical canal is open almost far enough to put a finger into the uterine cavity. The uterus lies anteflected, is enlarged to about the size of a uterus at the end of the second month of normal pregnancy. The uterine wall feels soft and flabby; pressure or moving of the uterus is slightly painful. At the anterior lip there is a superficial ulcer visible of the shape and size of a bean. The ground of the ulcer has the typical dirty, grayish-yellow color of puerperal ulcers. From the uterus comes the same kind of a discharge, which we have noticed in the vagina.

Upon investigation, I heard from the last doctor in attendance that, according to his belief, the placenta and membranes were complete, but that he couldn't be absolutely certain. This was somewhat contradictory to his first statement, that he removed a foul placenta from the cervix. Such a placenta, eliminated by nature from the corpus uteri into the cervix, is almost always complete. I took some of the discharge of the corpus uteri, carefully avoiding any mixture with vaginal or cervical secretion. I then put my index finger, without difficulty, into the cavum uteri, having previously given a disinfecting vaginal and uterine douche with hot one per cent. lysol solution. On digital examination (curette is not suitable for this purpose, because the fine sense of touch is lacking), I found the cavity empty except for some small pieces of placental tissue at the placental insertion at the posterior wall of the corpus uteri. These pieces were easily removed with the finger and a large dull curette; the uterus left in situ. (Usually the finger alone is the best and only instrument for this kind of work, since it does not create new wounds in an infected uterus. But in such a case as this a dull curette, carefully handled, is preferable, because it makes the pulling and stretching of an infected uterus unnecessary, the latter manipulations being dangerous on account of the possibility of causing the spread of the infection going on in, and perhaps already beyond, the uterus, into new and so far not infected areas.) After this I flushed the uterine cavity with a one per cent. lysol solution, put a drain of iodoform gauze into the cavity, and put the patient to bed. To keep the uterus well contracted, and if possible to avoid further absorption, I ordered an ice-bag on the abdomen and thirty drops of ergot fluid to be given four times a day.

The microscopical examination of the uterine discharge revealed streptococcus infection. At this stage the question of the removal of the septic uterus was to be decided. I considered the chances of the infection being confined to the uterus as very slight, and did not resort to this

procedure. I agree with Olshausen, that as long as the septic condition has not gone beyond the mucosa, this operation is not necessary: and that as soon as the infection has crept further, there will be very little chance for the operation to be undertaken in time to prevent the spreading into the cellular tissue of the pelvis and to avoid peritonitis.

I hardly need to mention that the treatment was of a vigorously supporting nature. In addition to nutritious food in concentrated form, strychnine, strophanthus, champagne, whisky, wine, coffee, etc., were given. Quinine in doses of about five grains was given night and morning.

The second day I removed the drain and continued the above treatment, adding two vaginal douches of a hot one per cent. lysol solution. I must not forget to report that the anti-streptococcus serum, injected in doses of 20 ccm. as soon as the streptococcus infection was made certain, proved of no benefit. I injected 20 ccm. every four hours until 120 ccm. had been given. There was a remission of temperature, but with no permanent result. If the Crede ointment, used conscientiously in drachm doses, night and morning, during the whole period of fever, did any good, is of course hard to say.

The condition of the patient changed but little during the next week, except that the temperature grew higher (105.6°), the pulse became weaker and more frequent, the dyspnœa increased, and frequently the diarrhœa, without blood, was almost intolerable for the patient. On some days the urine showed albumen, but no casts; on other days albumen could not be found. Leucocytes, 20–22000. At no time was any sign of peritonitis evident. Frequent vomiting was otherwise accounted for.

Nine days after the arrival of the patient in the hospital the spleen had increased to such a degree that it was easily palpable, reaching about a hand breadth beyond the left arch of the ribs.

During the patient's entire stay at the hospital the abdomen and vagina were examined with the utmost care for any sign of localized inflammation or suppuration. The vagina was frequently examined for evidence of fixation of the cervix or of any fluid accumulation above the vaginal vault. On the eleventh day a slight resistance, thickening and fixation to the right and front of the uterus, between the bladder and uterus, could be recognized. Although the expression of the patient and all the symptoms showed that the patient was desperately ill, the discovery of this slight tendency of localization of the affection encouraged me to hope that a speedy operation, aiming at this definitive point, might be able to accomplish something. There was no doubt that the grave, septic condition of the patient, permitted no loss of time by waiting for any pronounced fluctuation. Although well aware that a good many authors object to this early operation, I was convinced that only quick action could possibly save the life of my patient, who rap-

idly grew worse. The point at which I aimed was to the right and in front of the uterus, high up between the bladder and the corpus uteri. Neither the vaginal nor the perineal route seemed to me advisable for reaching this point, located, undoubtedly, extra-peritoneally. The only other way left for me was the abdominal incision. I had, by all means, to avoid the opening of the peritoneum and the danger of peritonitis. In order to increase the extra-peritoneal field of operation. I thought it advisable to fill the bladder with a sterile solution and to tampon vagina and rectum with colpeurynter and gauze. As we know, especially from operations on the bladder, these manipulations raise the bladder directly upward above the symphysis pubis and indirectly lift that part of the peritoneum which turns from the anterior abdominal wall over to the bladder. As long as the peritoneum has not become agglutinated to the inflammatory extra-peritoneal focus, these means are of great advantage, as was very evident in my case.

Under local anesthesia I made a cut about three inches long, immediately above the inner half of Poupart's ligament, just as for ligation of the external iliac artery. I then ligated the superficial epigastric vessels and cut through the insertion of the obliquus, externus, internus and transverse abdominis muscles, and through the fascia transversalis. After this I pushed the parietal peritoneum upward and inward and advanced subperitoneally without any further cutting, along the inner surface of the horizontal ramus of the os pubis to the involved focus, between bladder and uterus. The connective tissue surrounding the focus had the characteristic œdematous look, and formed a kind of shell for a relatively small pus accumulation, giving about a tablespoonful of pus, coverslips of which showed streptococci, chiefly in long chains. Some small bridges in the pus cavity were broken up to avoid sinuses, the cavity cleaned with warm saline solution and loosely tamponed for drainage. A counter opening through the vagina was not considered necessary. The operation is easy and without danger. Accidental injuries can be easily avoided, if after cutting through muscles and fascia, we reach the focus by blunt dissection.

Although I know very well how treacherous and how grave a disease septicaemia, and, especially sepsis post abortum is, I felt that this successful operation might possibly be the beginning of the turn for the better. I felt still more encouraged when the day after this operation the temperature dropped to 101° and the pulse to about 120. However, my confidence was of only short duration. The second day after the operation the temperature rose to its usual height (104°–105°), the pulse was weak, 140 per minute, and great dyspnœa (50–60 per minute) developed.

This characteristic picture called my attention at once to the respiratory system of the patient. (To be sure that nothing was overlooked I convinced myself that everything was right in the field of the operation.

The wound looked nice and clean, no retention of pus). There was a slight degree of immobility on the right side of the chest. On palpation this was still more evident than on inspection. Vocal fremitus was distinctly diminished, almost absent. Nearly absolute flatness existed at the back of the right side of the chest, from the sixth rib downward. The dullness passed without change into that of the liver. On auscultation only weak and very distant breathing could be heard.

These symptoms left me no doubt that I had to deal with an effusion into the pleural cavity, most likely of purulent character, in accordance with the history of the case. There was very little pain in the chest, very little cough, but very marked dyspnœa.

The condition of the patient spoke against an operation of any magnitude. For this reason alone I desisted from a resection of the rib, and after convincing myself by aspiration with a hypodermatic syringe that I had to deal with a purulent fluid, aspirated a little over a pint of hemorrhagic purulent fluid. Streptococci in profusion were found in the exudate. The dyspnœa and temperature decreased somewhat after this aspiration, but after two more days, the picture was again the same as before the first aspiration.

A second aspiration brought away a pint of fluid less purulent and less hemorrhagic. On the left and posterior side of the chest there was a slight dullness and feeble breathing noticeable and liquid rales could be detected. When aspiration proved unsuccessful I concluded that hypostatic congestion, or perhaps an embolic infract, which had not quite reached the periphery of the lung, might be held responsible for the condition on this side. During the few days following I had given up all hope, but continued the most vigorous stimulation of the patient, day and night, and ordered a hypodermoclysis with a quart of saline solution twice a day.

After this, however, the condition of the patient improved daily and rapidly. There is but one point of importance to be added; that is, that a thrombosis of the left femoral vein developed, the pelvic exudate having been on the right side. This condition improved rapidly by keeping the limb elevated, and, five weeks after admission, the patient was without fever and had passed the danger of the septic trouble. Patient recovered her strength very quickly and was discharged two months after admission in good health, only moderately anaemic.

In conclusion, I wish to say that my main reason for reporting just this case was to lay special stress upon the importance of an early incision after discovery of a palpable abscess in the cellular tissue of the pelvis. That the suppurative process sometimes continues and creeps further has caused many operators to warn against this early operation and to advise waiting until the suppuration has reached a location more accessible. But operators, who have seen that an early opening of even a small abscess, frequently produces a quick and absolute cure, and op-

erators who have seen that, by delaying the incision, patients get weaker and weaker and finally become incurable and permanent invalids, these will gladly join the advocates of the early incision. The early extraperitoneal incision is indicated as soon as the presence of pus in the pelvis is definitely diagnosed, may the quantity of pus be ever so small. The proper technique will enable us to reach these small abscesses in the pelvis. If this method is followed, the dreaded sequel of thrombosis or embolism may often be avoided. That in my case the repeated aspiration of the pus from the right pleural cavity sufficed, was a surprise to me, but on looking up the literature of this subject, I found reports of the same occurrence in several cases of purulent pleurisy after sepsis.

2329 Locust street.

ESOPHAGEAL STRICTURE.*

By John C. Morfit, M. D., of St. Louis.

The diagnosis of esophageal stricture is as simple as anything in medicine. In its early stages it may give rise to few acute symptoms, and those of a transitory and inflammatory nature, unless the complications are so severe as to mask the potential stricture in early death. Should the patient recover from the immediate effects of the injury, there is a variable period of comparative ease, followed within a few weeks by gradually greater difficult deglutition and consequent loss of flesh and strength. Such symptoms, in this order and rapidity, following an accidental or suicidal swallowing of caustic chemicals, are a train of symptoms hard for a careful observer to mistake. These, however, are presumptive points, and for a positive diagnosis we have at hand more direct means in esophagoscopy and sounding. The former is not sufficiently attractive in its technique and results to supercede or equal the latter in the hands of the average examiner. The simplicity of the examination does not discount the danger of instrumental work in the gullet, and the common, if not frequent accidents attending the procedure, are evidence enough to inspire the greatest caution.

At the same time the value of the flexible bougie in determining the distance from the incisors, and the caliber, extent and elasticity of the constriction is so great in planning the treatment as to make the benefits commensurate with the risks. In malignancy a stricture that is narrow enough for harmful results had better be let alone and the hope anchored to early gastrostomy. It is in the malignant strictures that most of the accidental perforations into the mediastinum, pleural and pericardial sacs have occurred, and relatively less frequently in the very small proportion of cases of benign obstruction.

A cervical stricture, and by that I mean one situated well above the level of the sternal notch, admits of bolder attempts, because of the

*Read before St. Louis Surgical Club, December 14, 1904.

greater accessibility and less danger. The large majority of all strictures are either well above or far below this point, at the two anatomically narrower portions of the tube—the cricoid and the diaphragm levels. The finger will, therefore, gather much important information in high strictures, especially in children, as was my experience with the child whose case I present.

Should a perforation take place in the cervical region there is no doubt as to the wisdom of early esophagostomy, with external drainage and intubation. As in all surgical procedures, time is the important consideration, and the sooner radical treatment is begun the more it promises. A stricture may be impervious to ordinary food and drink, yet not a complete closure and amenable to dilation. In the case of the child I report all solid food was ejected, and much, or possibly all water that was swallowed was regurgitated.

He looked starved, and my finger made out the stricture just about the top of the larynx. I could not pass very small bougies of various sizes after repeated trials extending over four weeks. Child was so weak at the first visit that I desisted from all manipulation and gave him a little olive oil. This was readily swallowed and more than an ounce was retained. Pure Norwegian cod liver oil was prescribed and taken in sufficient quantity to revive the patient during the next few weeks, when he returned to me with complete obstruction. Examination revealed a very interesting condition. The child had been unable to swallow anything the previous twelve hours, and, on inserting my finger, the canal was found to be plugged with a piece of bread crust, on the removal of which swallowing of oil was resumed. This experience suggests the possibility of an apparent complete closure at any point in the tube. Such a food particle might very readily obstruct the passage of the bougie. Esophageal irrigation then, as a preliminary to examination or treatment, is a logical deduction and to be strongly recommended. The choice of treatment in stricture, whether benign or malignant, lies between gastrostomy and dilation either from above or from below. Dilation is to be preferred if it can be accomplished rapidly enough to effect nutrition. The post thoracic operations on or removal of the tube are attended with such a mortality as to be prohibitive. Permanent intubation necessitates preliminary dilation either retrograde or from above. Most cases of benign stricture manifest themselves some weeks after the burning has taken place. In the two cases that I report, it was five weeks in the one and six weeks in the other before surgical aid was solicited. In both instances recovery had been so rapid that the original cause was overlooked. In the man early dilation may have improved his nutrition, but it is doubtful if his life could have been prolonged in the face of the post-mortem findings. When a case is so far gone as to require rectal feeding it is about beyond operative aid. With all due respect to what is claimed for rectal alimentation,

I am loath to credit it with anything more than a transient stimulating effect. Cases are never mentioned as being supported by this method considerably longer than experimenters have lived absolutely without food. Complete stricture should be prevented, for there are few cases that can be permanently cured. In accidental or suicidal burns the sequellæ should be anticipated and examination and preventive sounding performed, not immediately, but in about a week or ten days after the acute symptoms have subsided. If done before the inflammation has receded the danger of perforation is manifestly greater. This is, of course, the ideal treatment, but unfortunately there are a certain number of these cases which go untreated until nothing promises much hope. A very narrow stricture requiring the smallest bougies and dilating with difficulty, requires too much time to overcome and quicker means of obtaining nutriment must be employed. Gastrostomy has its drawbacks, but it is the quickest and surest way to revive these starved patients, and even in the hopeless malignant cases it will give great comfort. In its performance, I cannot see that any other operation has an advantage over the classical one of attaching the anterior wall of the stomach about its middle toward the fundus to the parietal parites and establishing a fistulous opening just to the left of the median line and about two inches below the xiphoid. The various flap and valve operations are contraindicated in these debilitated subjects. If the patient should become vigorous enough to make them effective, the same return of strength and vitality would cause a sphincter action in the split rectus. The operation may be done in one or two stages. In my case I made the approximation and pinched up the anterior gastric wall in a cerenude, which was left in place twenty-four hours. At the end of this period a fistula was established by cutting off what the cerenude held. The opening permitted the introduction of a number ten catheter, through which liquid food was given, affording the patient the greatest comfort and satisfaction.

The tube soon became loose in the fistula and leakage occurred. This was obviated by putting in on successive days permanent feeding tubes of gradually increasing size to fit snugly in the opening.

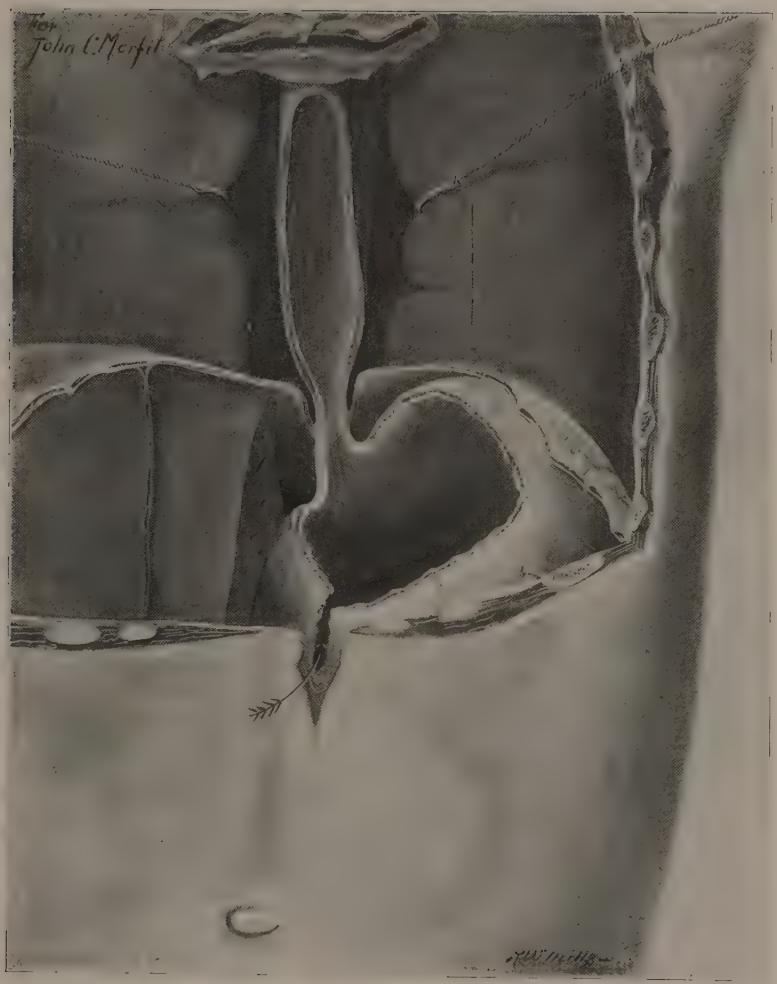
The tube was kept closed and in place by a forceps and a safety pin properly arranged. Any desired quantity or quality of food was readily introduced through it. From a study of the two cases I submit, one a high stricture in an infant, cured by lubricant food and dilation, the other a low stricture complete and amenable only to gastrostomy, I would conclude: First, all cases where stricture formation might be expected should be watched carefully and the esophagus examined and dilated in ten days or so after the injury, and if a stricture is beginning to form it should never be allowed to increase. This treatment will give the happiest results: Second, all strictures are not hopeless that seem complete, a food particle may cause a partial stricture to seem complete;

the irrigation and the early administration of nutritive lubricant oils will in many cases preserve life and prepare the way for dilation, when even a bougie cannot be passed. Third, gastrostomy for feeding and for retrograde dilation is the only alternative, and should be done as soon as the patient continues to lose flesh, even though there be a small and patent stricture present, and before the vitality is so far reduced as to leave little or no margin for recovery from a major operation.

Case 1.—B. B., age two, otherwise healthy infant, of good family and personal history, came to my clinic at the Mullanphy Hospital, August 16, 1904. Difficult deglutition followed five weeks after taking a weak solution of lye, could swallow no water or milk, very weak, ravenously hungry and greatly emaciated. Would not admit a No. 10 bougie, swallowed only olive and cod liver oils. He lived and improved on oil and oil-soaked foods, although ordinary diet would not pass the obstruction. Hominy, potatoes and rice were swallowed when oiled, but not without. Although the patient was seen seven times in the following three weeks it was twenty-four days before a No. 10 bougie passed into the stomach, although at all previous visits the attempt had been made. It was another week before a No. 9 bougie could be passed, although one intervening attempt had been made. Since then obstruction has not recurred except once temporarily as before mentioned and the child is strong and well nourished, although the bougie is passed now about twice a week to insure premanency.

Case 2.—White male, age fifty-one, shoemaker, healthy and of good habits and family history, presented himself during my service at the Mullanphy Hospital. Six weeks previously had taken some home-made corn cure consisting of snake root, laudanum and concentrated lye as a gargle by mistake. It caused a burning sensation, but little was swallowed, Took household emetics. Two weeks afterward his throat felt sore and in three weeks difficult deglution was noticed; food, especially ice cream, could be felt lodged in the gullet, when there would occur a sudden giving away, followed by a sense of relief. His usual weight was 134 pounds but he lost fifteen pounds in three weeks; was treated with bougies in another hospital with only temporary relief. Constipated, tongue coated, sclerotic arteries. Examination showed complete stricture ten inches from the incisors. Gastrostomy was advised, but he was so pleased at the ease with which he swallowed oil and oily food that he withheld his permission to the operation. Numerous attempts at the passage of bougies were made but at no time could a passage be effected. On 13th of September he finally consented to operation, and an incision was made through the left rectus muscle, one inch from the linea alba, and extending two and a half inches from the thoracic arch vertically downward; tissues were devoid of fat and scarcely any bleeding occurred. When the peritoneum was opened air rushed in, the viscera were distant from the anterior abdominal wall, peritoneum was

Esophageal stricture at cricoid level and at point of division of trachea, with intervening sacculation. This is a post mortem specimen not suspected during life.



Case 2.—Esophageal stricture at diaphragm level. Operative opening into stomach indicated.

dry and glistening, liver congested and enlarged, stomach very small and atrophic, the walls being little thicker than those of the intestines. The stomach was grasped with forceps about the middle of its anterior wall and drawn through the wound, gauze being packed about it. Lower one and a quarter inches of the incised mural peritoneum was closed with continuous catgut, the gauze was removed and the stomach held in place by four anchor sutures passed through the parietal and gastric coats. Then a continuous catgut suture was run through the opposing surfaces, all around, eight or nine interrupted sutures were then passed through the external rectus fascia and the stomach wall The gastric surface thus left was pinched up with a cerenude, then the portion of the abdominal wall below the fistulous area was closed with interrupted, buried suture. The patient stood the operation well, with no shock, and was soon assuming a semirecumbent posture. On the next day the fistula was established and saline solution introduced through the catheter. On the second day the patient was obtaining nourishment through the tube. Patient progressed well and, on the fourth day was able to walk to the dressing room; the abdominal wound healed satisfactorily, although slightly retarded by the action of the escaping gastric juice. This leakage was stopped by the employment of tubes which fitted snugly in the gradually enlarging opening. The patient received as much as twelve ounces through the tube, purgatives and stimulants were given as required. Hunger and thirst were satisfied, but improvement in the general conditon was not marked, and on the sixteenth day he complained of a "rotten meat taste," which may be significant, taken in connection with the post-mortem finding. At this time the patient was able to move around the room and go on the porch, and come to the dressing room for feeding. He then began to sink slowly and died on the twenty-first day. There had been no symptoms of peritonitis; the post-mortem showed parietal peritoneum very delicately adherent to the left lobe of the liver, in the vicinity of the wound. Gall bladder distended without gall stones, no fluid in the peritoneal cavity; in the right lung, internally, in immediate relation to the esophageal stricture with which there was no connection, there was a recent cavity filled with greenish fecal-smelling fluid; right lung was in a hepatized condition, some pieces sinking in water, other portions merely hypostatic. The abscess location gave a gangrenous appearance. In the esophagus, about an inch above the cardiac opening of the stomach, was a stricture not admitting the little finger, and giving the idea of complete closure by a hard, cicatricial band, just above the stricture; the mucous membrane was eroded but there was no perforation. The esophagus was removed entire with the stomach, without disturbing the connection between the latter and the abdominal wall. The operative fistula showed perfect union and there existed no evidence of peritonitis or other abdominal complications or sequelæ. Cause of death was inanition and pulmonary abscess or gangrene and pneumonia. The situation of the gangrenous cavity in the lung, in immediate relation with the site of the esophageal stricture, suggests the possibility of some causal relation, but in all probability it is a coincidence.

THE SILVER FORK DEFORMITY.*

By Nathaniel Allison, M. D., of St. Louis.

Every surgeon has had some experience with this deformity; a very few may have been fortunate enough to escape it as a result in their own practice, but even these few must have heard a story from a patient who placed blame at the door of some professional brother. Some of us have seen more or less of the medico-legal proceedings connected with this deformity, either as witnesses or defendants. Indeed, it may be said without exaggeration that this deformity, toward which all fractures of the forearm near the wrist tend, is an old and well recognized "bete noire" of medical practice. Colles in the year 1814 described and classified the form of fracture of the radius that bears his name; since his memorable work appeared, volumes have been written and animated discussion has taken place as to the mechanics and treatment of fracture low down on the forearm, all with the idea as to prevent this deformity. Many text-books, such as Hamilton, Stimson and Scudder, are especially full on the diagnosis and treatment of fractures that give rise to the silver fork wrist. Medical students receive practical instruction on the fine points of treatment, but despite all this we still have an annual crop of fork-shaped forearms, and it is a question whether we could improve today upon the 35 per cent. success claimed by Hamilton, the expert of the past generation. Looking at this subject in a broad way, it is quite evident that the deformity of the forearm, known as the silver fork deformity, is one exceedingly hard to prevent even in the hands of an expert. It is not the purpose of this paper, however, to go over this part of the field, but to assume that we have the deformity established and consider its correction.

Inasmuch as the etiology bears on the correction, I wish to call your attention to a few common facts, avoiding such alluring topics as the claim of Moore (1872) that there is usually a luxation of the ulna, or such an absurdity as the statement that the lower end of the ulna is always fractured with the radius. As to the exciting cause of injury, we have our own observations, agreeing with those of all observers since Sir Astley Cooper himself, that a fall on the outstretched hand, palm down, even a slight fall, is the usual cause of the fracture. This fracture, in the bulk of cases, takes place in the lower one inch of the radius. The few cases where both bones are broken or where the lower radial epiphysis is displaced are equally as important to our consideration. Any of these injuries established, we have our deformity. Simply, what happens is this: The shaft of the radius being free from its lower moorings, violent muscular spasm tends to pull it outward and forward. It is agreed that the principal agent in this is the pronator quadratus,

*Read before the St. Louis Surgical Club.

assisted to some extent by the pronator radii teres. The injury is such that the lower fragment, or fragments, are tilted in a backward direction. Thus both fragment ends are directed forward, making the prominent anterior wrist and at the same time producing the hollow of the fork on the back. This is the immediate deformity, failure to reduce which results in the fixed deformity. The failure may be placed under several heads: First.—Failure to diagnose the fracture and the bad alignment of bones. Under this head we have the large number of cases treated as "sprains," "severe sprains" or dislocations of the wrist. In children, where the fracture is often subperiosteal, there is more excuse for this failure than in adults. It must be admitted, however, that swelling often obliterates the signs and makes diagnosis hard, but we must also admit that these diagnoses form a very productive field in which the permanent deformity is cultivated.

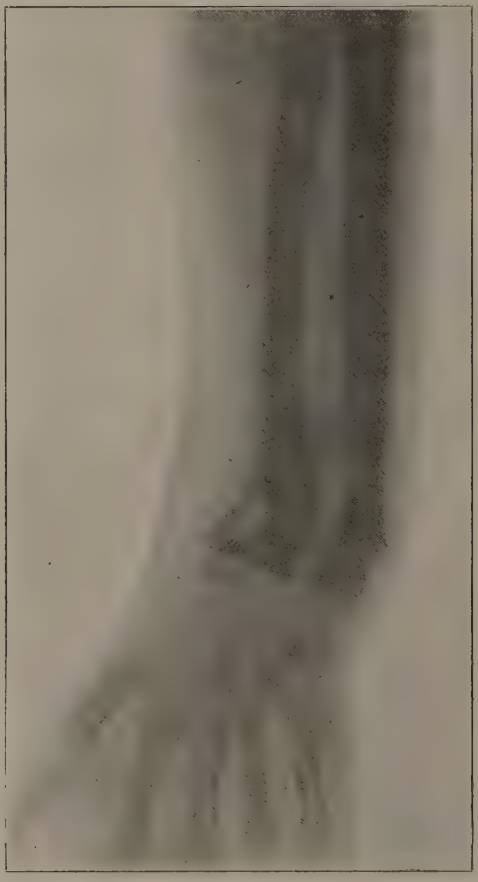
The Second Class.—Where the true condition of fracture and displacement is discovered and a reduction is not accomplished. Many of the permanent deformity class come from this source. Under this head is where the careful and even expert surgeon often meets with disappointment and blame.

Class three is that where the surgeon has made a correct diagnosis and an apparently successful reduction of deformity, has applied retention apparatus for a time, and then finds that the deformity has returned.

The consensus of opinion in the literature is that if these deformities are reduced in the first place, there is little danger of their returning, and that where there is a relapse it is more or less indicative that the reduction was not accomplished. Kenerson, in a very complete paper on fracture of the radius, makes the statement in closing, after describing the use of a skein of Germantown zephyr to effect reduction (in passing it may be well to remark that this method is a very excellent one) says: "This method will insure a perfect reduction of the deformity without unnecesary force, and will so complete a reduction that the bone will 'stay of itself' when undisturbed, will stay for all ordinary examination, such as the x-ray and manual, and still will remain while you leisurely apply a splint." I am of the opinion, however, that some cases do relapse into deformity after they have been properly reduced. I think the retention appliance must be carefully planned to offset the tendency to deformity. I am also of the belief that the class of cases which were reduced, and well reduced, at times contributed to the established deformity class.

Permanent silver fork deformity, arising from these sources, and seeking further surgical aid, what are we to do for it? Scudder, in his book on fractures, suggests osteotomy of the radius and correction, but does not go into particulars. I wish to present to you two cases in which I have done osteotomy of the radius for this deformity. First,

however, let me state what I consider to be sufficient reason for operating or withholding operation. In a person of middle life or beyond, if the deformity does not interfere with the function of the wrist to any marked degree, I should think it ill-advised. In a young adult who

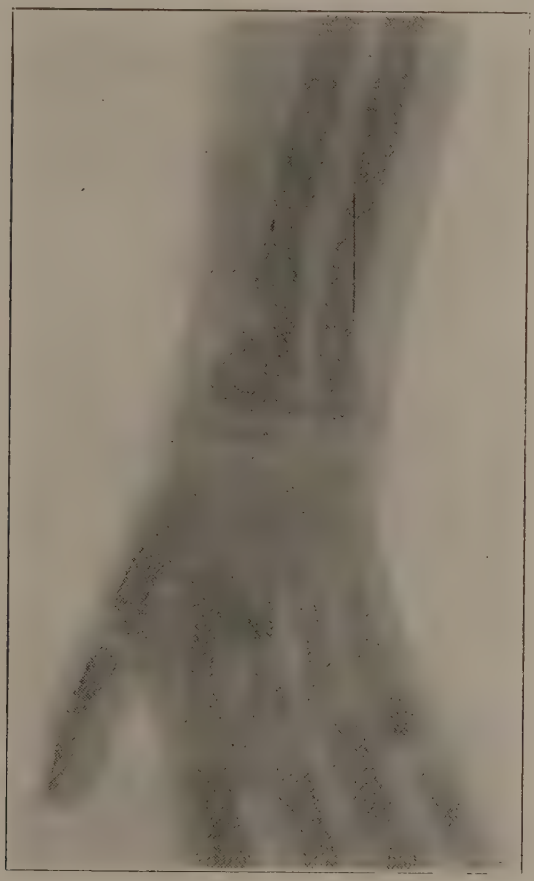


Case 1.—Before osteotomy, showing fractures and position of deformity of the forearm.

needed a strong wrist function, I think it should be considered. In a growing child, where deformity is not difficult to correct, I should advise the operation. It is, perhaps, too serious an operation to undertake for appearance sake alone.

Case 1.—L. W., æt. five years. In September of last year, while at play, a wagon gate fell on her right arm. She was immediately taken

to a doctor; her arm was "set," and an anterior splint applied. She had great pain, and her hand was extremely swollen for two days; then her mother took her to a charity clinic, where her arm was re-dressed. Two weeks later the arm was discovered to be in a position of deformity;



CASE 1.—After osteotomy, showing realignment of bones and correction of forearm deformity.

an anesthetic was then given and an attempt made to correct the deformity, which was unsuccessful. Two weeks after this she came under my care. Examination showed a healthy child with a normal physical make-up, aside from her right forearm. Here there was a typical silver fork deformity and firm bony union. An x-ray picture showed fract-

ure of both the radius and ulna at the lower ends, with what seemed to be splintering of the radius. Operation was advised. One week later, through a two-inch incision over the outer border of the radius, starting half an inch above its lower end, the bone was exposed, by careful dissection avoiding the radial nerve. The periosteum was found intact; it was divided in the line of incision. A small osteotome was then forced through the bone, and a complete transverse fracture established. The union of the ulnar fragments was then broken up by inverting the hand. The wound was closed. The forearm was now firmly grasped and molded into normal shape. In fact, it was over-corrected; on this I wish to lay special stress. A light plaster bandage was then applied, which was held until it set in the over-corrected position. The back of this was then cut out so that the arm rested in a sort of perfectly applied anterior splint. The wound healed by first intention; at the end of six weeks the splint was removed. *Result*, no deformity, and the skiagram shows normal alignment of bones.

Case 2.—W. R. Boy, æt. seven years. Two weeks before patient came under my observation he fell down a flight of stairs and injured his wrist; it was swollen and painful. His mother took him to a charity clinic, where his arm was put on an anterior splint. Deformity was present when I first saw him, and of the silver fork variety. Operation and correction of the deformity was decided upon. A skiagram was taken which showed a separation of the lower radial epiphysis. I decided then that manipulation under an anesthetic would be all that this case required to restore the forearm to the normal. Accordingly, three weeks after the injury, the boy was anesthetized and the attempt made. I found it impossible to overcome the inward displacement. I then repeated the operation described in Case 1, and got an equally gratifying result. It was more difficult to do the osteotomy in this case, as the bone was harder in structure. The skiagram shows a radius returned to what is apparently a normal contour.

The McEwen osteotomy on the lower end of the femur, as well as the Gant osteotomy at its upper end, also the osteotomies on the tibia, are operations that are attended by little risk to the soft parts. Osteotomy on the radius at its lower end, on the contrary, is an operation that requires considerable care; the anatomy of this region is such that a clear understanding of what one is doing is absolutely necessary. I think it highly advisable to operate through a large opening, bearing in mind the fact that in order to avoid a thing it is best to find it. Special care should be used when it comes to dividing the bone with the chisel, there being some slight danger of dividing other important structures. In the attempt to overcome the deformity in both of my cases, I put them up in slight over-correction; that is, I sought to increase the backward curve of the radius at its lower end, as well as to slightly displace it in an outward direction.

On this very point of slight over-correction I wish to place especial emphasis. I am of the opinion that many of the corrected cases have relapsed into deformed positions because only correction, or what seemed to be correction, was obtained. Experience of many who have thought that the reduction was complete and the correction of deformity accomplished in a fresh case of fracture will, I think, bear me out in this view. We have all seen cases that we were sure would result in perfect restoration of bony alignment, that have been disappointments; perhaps only the expert eye could note the deviation from normal, but the disappointment was felt, nevertheless, in the failure to realize what we considered certain. I think it might be said that our result is always a little less perfect than we felt sure it would be at the time of correction. I wish, therefore, to call your attention to the advantages of slight over-correction. It is generally admitted that muscular pull is the important factor in the production of this deformity. Realizing this, and the fact that we place our reliance in soft pads to retain the reduced position, I think it advisable to go a little further than Kenerson advises and slightly over-correct.

The question of splints and appliances comes up. What we wish to do with a splint is to hold the forearm in such a way that the deformity cannot exist at the same time with the splint. Colles recommended a straight palmar and dorsal splint, and does not incline the hand. Seeking to improve on this method, boards have been applied to all sides of the forearm, and in consequence almost every illustrious surgeon has a namesake in some form of forearm splint. Perhaps due to Colles teaching the anterior splint has been the first thought of the general surgeon when putting up these fractures. I wish to call your attention for a moment to the dangers that lie concealed in this same anterior splint. As a rule faith is placed in the padding placed on a board which is strapped to the anterior surface of the forearm. It is absolutely necessary to hold the backward curve of the radius. Pads of cotton will pack down, swelling will become less. The agents working toward deformity, *i. e.*, the pull of the muscles, will have nothing to resist them and silver-fork position will result, and this will happen, too, where the reduction of the deformity has been perfect. In my cases I made a plaster mould of the anterior surface of the forearm while it was held in an over-corrected position; this was readily converted into a removable splint. Though this is rather an elaborate dressing, and one not well adapted to general needs, I fancy its properties for holding the corrected fracture are unsurpassed. For the treatment of fresh fracture the method of Scudder is the best. He recognized and took advantage of the fact that the posterior surface of the forearm and the back of the hand are in one plane. Applying his board splint to this plane he is able to draw backward and outward the fragments and hold them.

In closing I wish to state several opinions that I have gained through the observation of the two cases reported.

The silver-fork deformity is exceedingly hard to prevent.

When skill and watchfulness have been employed, and the deformity has followed forearm fracture, I think one of two conditions, or perhaps both of them together, are the cause. (a.) Failure to over-correct. (b.) Insufficient retention of the over-corrected position.

Osteotomy is a practical operation in certain cases to re-establish normal bone alignment.

EDITORIAL COMMENT.

THE NEW MEDICAL ST. LOUIS.

All living things grow. But not only is their rate of growth not uniform, but it often happens that internal nutritive processes essential to development continue for a long time without external manifestations, until, at last, the right moment having arrived, the organism suddenly puts forth its long pent-up powers and astonishes the beholder with a rapid and enormous increase in size and perfection of form. This is the miracle of spring, marvelous even to the old man who has witnessed it many times after the long sleep of winter. The same phenomenon occurs at times in the intellectual development of communities. A Dante is born, "the voice of a thousand years." The muse of English poetry opens her languid eyes upon an Elizabethan era. The physical sciences progress long at the pace of a horse until all at once they bound forward impelled by steam and electricity.

These thoughts were suggested by recent events in the medical history of St. Louis. For years much excellent work has been done here by individuals, by teaching institutions, by societies and within the last six years by the Medical Library. And yet much of this work was done, as it were, in the dark. Not only did men in other cities hear comparatively little of our activities, but many of our own brethren here at home knew little of what was going on around them, not because the work was not able to speak for itself, but because its voice was stifled by conflicting interests and, perhaps, prejudices. The miasm that obscured the landscape was selfishness, from which was bred isolation, division, exclusion and an unwillingness to acknowledge and therefore to share in and be benefited by the good originating outside of each one's immediate circle.

Among the apparent results of such a system, or lack of system, might be reckoned the relatively small membership and still smaller average attendance of our chief medical society. Some of our leading practitioners openly boasted that they never entered its halls. Again, the local delegations to the State and National Associations were usually far smaller than they should have been. And, again, the medical profession, professedly a scientific body, a body of students, continued year after year, in spite of occasional ill-directed enterprises, without any central depository of literature, without a library.

So long indeed did this state of things continue, that when a small group of men, coming from widely-separated medical circles, but larger-minded and more optimistic than some of their fellows, announced their purpose, in the spring of 1899, to found a library for the use and profit of the entire profession, there were not wanting those who wisely shook their heads and smiled superior at such youthful enthusiasm.

"They had seen such things tried before," although they did not specify when or by whom.

Nevertheless, the enthusiasts continued their work. And to-day they witness its fruition, made all the more satisfactory by the concurrent and almost simultaneous attainment to maturity of certain other plans for the betterment of the profession. And this is no accident. It always so happens, that long, patient, continuous effort in the right direction, when it does come into its own, does so in such bountiful measure as to astonish even those to whose labor the harvest is due. Fortunate coincidences come to those who work for them.

And so it has come to pass that the physicians of this city possess a library of their own, managed by themselves for themselves, housed in its own building, of handsome exterior, well located, commodious and well appointed; that the Medical Society meets in that building, in a hall owned by doctors, where they are no longer the guests of strangers, but are as members of one family under the paternal roof. At the same time the reorganization of the National and State Associations, by which all members of the local society are members of the state body, gives a new impetus to both organizations and binds city and country in one common whole.

And thus the New Medical St. Louis is born. Mindful of all that is noble in the traditions of old St. Louis, it feels itself capable of larger and better things, and with a confidence based on arduous toil and true purpose prepares for still greater deeds in the new era.

A NEW DEPARTMENT.

It is with much gratification that the INTERSTATE MEDICAL JOURNAL finds itself able to announce to its readers the acquisition as a member of its editorial staff of Dr. Walter Baumgarten. Beginning with this number Dr. Baumgarten, who some years ago edited the department of therapeutics, will resume the conduct of this division of the JOURNAL'S abstracts. As our readers will see, a new department has been added to the JOURNAL, that of Diagnosis. Hitherto this branch has been included in the department of internal medicine, but the size of the field seemed to make a division into two portions desirable. The new department will cover diagnosis in its widest sense: new tests of all sorts, new microscopic methods, contributions to physical and clinical diagnosis as well as summaries of cases reported that are of diagnostic importance. Its editor will make an effort to furnish abstracts of everything of prime importance that appears in this field, but especial attention will be paid to articles appearing in those journals that are comparatively inaccessible to most of our readers. The summary in the January number of the progress during the year in methods of diagnosis should prove of considerable value and interest.

MEDICAL AND SURGICAL PROGRESS.

INTERNAL MEDICINE.

IN CHARGE OF

JESSE S. MYER, M. D.

The Cure and Latency of Diabetes Mellitus.—LEO (*Berliner Klinische Wochenschrift*, No. 50, 1904) calls attention to the difference in opinion among recognized authorities as to the cure of diabetes. Seegen, v. Mering and Rump, for instance, maintain that diabetes is never cured. Cantani, v. Noorden, Ebstein and Ewald are among those who maintain that the cure is a possibility.

Leo believes that the difference of opinion is due to the fact that the lines are not clearly drawn between glycosuria and true diabetes, and that all are not agreed as to what the cure of diabetes constitutes. Inasmuch as the soluble carbohydrates may cause glycosuria in a non-diabetic person, they must be excluded as a factor in testing cases, and starches only should be used as the criterion. While the non-diabetic person can take unlimited amounts of starch without excreting sugar in the urine, the diabetic is characterized by the fact that his power of assimilation of starches has a limit. If this boundary is overstepped, dextrose appears in the urine.

The author maintains that we may speak of a cure of diabetes only when an individual who excreted sugar in his urine, while on a diet free from soluble carbohydrates, ceases to do so permanently in spite of a diet rich in starches.

The author reports a case in which the sugar disappeared from the urine twice for a long period of time, and the patient manifested unlimited power of assimilating starches. Each time, however, the diabetes returned. Such a case shows the importance of being always guarded with reference to a prognosis in the so-called cures of diabetes. The author is inclined to the belief that many of these cases are considered cured during a period in which they are simply latent.

A Case of Situs Inversus of the Stomach, the Duodenum and the Spleen in a Female, Sixty-three Years of Age.—HALFF (*Muenchener Mediciniche Wochenschrift*, No. 51, 1904) found in the entire literature on situs inversus of the abdominal organs but three cases reported in which only the stomach, duodenum and spleen were transposed. The author's case, therefore, is the fourth on record. The patient died of carcinoma of the stomach with metastases in the liver. The autopsy revealed a complete transposition of the stomach and duodenum. The stomach extended along the right half of the posterior surface of the liver; the greater curvature on the right side, the lesser on the left. Instead of one spleen, there were two about the size of pigeons' eggs on the right side near the fundus of the stomach. The pylorus was on the left side of the median line, the curve of the duodenum was convex to the left.

The pancreas was found over the upper arm of the duodenum in the middle line, to the left of the hilus of the liver.

The author goes into the distribution of the blood vessels of these organs, their relation to the other organs, and presents interesting drawings of this unusual condition.

A Study Concerning Routes of Infection in Pulmonary Tuberculosis.—WASSERMAN (*Berliner Klinische Wochenschrift*, No. 48, 1904) presents a number of records from which he endeavors to show that the tubercle bacillus may gain entrance into the lungs through the cervical lymph nodes. He believes that from here they find their way to the parietal pleura, and then through adhesions with the visceral pleura gain entrance into the apex of the lungs. He discourages any massage of the swollen cervical lymph nodes because of the danger of disseminating the process.

Concerning Two Cases Resembling Weil's Disease, with Small Transitory Tumors in the Liver.—EINHORN (*Archiv. fuer Verdauungs-Krankheiten*, Vol. x, Pt. 5, 1904) reports two cases corresponding to the clinical picture of Weil's disease, but differing from it in that the enlargement of the liver manifested itself in small circumscribed tumefactions about the size of a walnut. In both cases the disease was ushered in with fever, severe gastric symptoms and general weakness. During the fever period, which lasted about a week, there was decided enlargement of the spleen as well as of the liver. A feature of unusual interest in these cases was that, in addition to a general enlargement of the liver, small, hard tumors could be felt on the surface of the liver, which gradually disappeared as the general symptoms subsided. Einhorn is of the belief that these tumors were the manifestation of an acute circumscribed hepatitis, with exudation, which disappeared as the inflammatory process subsided.

During the short period in which they existed they could in no way be differentiated from malignant neoplasm or gummata.

Concerning the Physical Properties of Solutions in the Human Stomach.—SOMMERFELD and ROEDER (*Berliner Klinische Wochenschrift*, No. 50, 1904) present a series of experiments concerning the physical changes which fluids of different molecular concentrations undergo in the stomach. Most of the experiments thus far made do not make allowances for the admixture of the solution with saliva.

The authors' investigations are of special interest because of the absolute exclusion of this factor. Their experiments were conducted in the case of a child with complete stricture of the esophagus, upon whom a gastrostomy had been performed.

Experiments were made with hypotonic solutions, isotonic solutions and hypertonic solutions. They found that every solution in the stomach, uninfluenced by the saliva, changes its molecular concentration. Solutions isotonic with the blood and hypertonic solutions become more dilute, while the hypotonic solutions become more concentrated. The hypertonic solutions, after remaining in the stomach for an hour, pre-

sent a higher freezing point than the blood; these solutions, therefore, leave the stomach in an hypertonic state.

They were not able to demonstrate an increase of the fluid in the stomach.

The Use of Supra-Renal Preparations in Diseases of the Esophagus.—JANOWSKI (*Archiv. fuer Verdauungs Krankheiten*, Vol. x, Pt. 5, 1904) employs surpra-renal preparations in the treatment of acute toxic esophagitis with great satisfaction. He finds that in patients thus afflicted, who are unable to swallow, the application of supra-renal preparations give great and prompt relief. In fact, if five or ten drops of adrenalin solution (1 to 1000) is given frequently during the day the patient is rendered comparatively comfortable. He recommends its use also in carcinoma of the esophagus, claiming in this, as in the other conditions, a palliative effect. Its virtue in these cases depends upon its direct contractile effect upon the blood vessels, thus reducing, temporarily, at least, the inflammatory process and the pain and discomfort accompanying it.

SURGERY.

IN CHARGE OF

WILLARD BARTLETT, M. D.

Peptic Ulcer of the Jejunum After Gastroenterostomy.—TIEGEL (*Mitteilungen aus der Grenzgebieten der Med. und Chirur.*, Band 13, Heft 4 and 5).—This article details the experience with the above pathological condition which Professor Mikulicz, of Breslau, has had. Since 1899 they have operated upon five of these cases with a certain diagnosis. In addition to these five the author has collected sixteen cases from the literature, but, as the Germans are in the habit of doing, has neglected all except German literature, giving an inadequate review of the subject, such extensive work as that of Mayo Robson, which recently appeared on the subject, being completely left out of consideration. The most interesting thing about the article is that this condition was found sixteen times after anterior gastroenterostomy, once after the "Y" method and four times after the ordinary posterior operation. In one case the symptoms appeared in ten days, while in another eight years elapsed before they were noticed. The lesion looks like an ulcer of the stomach or duodenum and its symptoms are substantially the same as those just mentioned. It is a somewhat difficult matter to make an exact diagnosis, though we are most likely to have to do with a jejunal ulcer if acute perforative symptoms present themselves after gastroenterostomy, especially of the anterior variety.

A Case of Fistula of the Thyro-Glossal Duct.—V. CORNIL and ED. SCHWARTZ (*Revue de Chirurgie*, December, 1904).—The authors report an operation of their own upon one of these interesting embryologic conditions. It is interesting to note that, as in other cases, the duct is

usually not single but ramifies, there being from two to several branches of the original duct. It is always clothed with epithelium. Sometimes there is trouble with phonation and deglutition as well as considerable pain. In the authors' case the malady first attracted attention at the age of twelve years, and now, at eighteen, there was seen a small opening 3 cm. above the sternal notch leading up to the hyoid bone, past which it was impossible to follow it. Excision of the tract and suture led to a union by primary intention and the patient was relieved of all symptoms. It was one of the branching canals above referred to and its interior was clothed with ciliated columnar epithelium.

The Operative Treatment of Cancer of the Breast.—WARREN (*Annals of Surgery*, December, 1904).—One hundred cases are reported, and the results certainly justify the extensive and logical operative technique which the author proposes. In five cases the cancer had developed as a secondary process in a cyst wall or as a result of an old inflammation. In another a small fibroma of twenty years' standing had broken down into a malignant growth. Of the author's one hundred cases, twenty-six can be regarded as cured for more than three years after operation. The most favorable prognosis is to be made in colloid cancer, while adenocarcinoma is next and the scirrhus variety gives less hope, but the medullary form is worst of all. Warren has not had a single permanent recovery in which it was necessary to dissect the cervical glands, consequently he has given up this as a routine practice. The operative technique is well described and beautifully illustrated, but it must be seen in the original to be properly appreciated.

The Treatment of Large, Sharp Foreign Bodies in the Cervical Portion of the Esophagus.—DR. W. KRAMER (*Zentralbl. fuer Chir.*, December, 1904).—A case is described in which a man swallowed a set of false teeth while drinking beer, and Kramer made every effort to retract or dislodge the obstruction from above, but was unsuccessful. He then attempted to do a cutting operation and found to his surprise, after he had exposed the exterior of the esophagus, that it was not at all necessary to open the viscus, since he could manipulate the obstructing mass enough so that the patient was able to expel it by coughing. The author does not know of this having been done previously, though he does not make any special claim to originality. He grants that the esophagoscope might have enabled one to remove the set of teeth without cutting. This was not used in his case. In another case the patient swallowed a bone which became lodged in the esophagus, and this, too, the author was enabled to remove in the same manner.

Double Rupture of the Biliary Passages Following a Fall.—SPILLMANN (*Arch. Provin. de Chirurgie*, December, 1904).—The patient, a child of eight years, fell fifteen metres upon the left side, breaking his arm and suffering what was vaguely classed as internal injuries. He complained of extreme pain in the region of the liver, which increased in violence during the next few days. The abdomen became distended, he had fever, and symptoms of peritonitis appeared. Twenty days after the injury he was taken to the hospital and a diagnosis of rupture of the

biliary passages was made. As he was in a grave condition the abdomen was opened at once and an immense quantity of bile gushed out. On account of the adhesions which had formed and completely shut off the neighborhood, it was impossible to tell just where the lesion existed, so the patient was put to bed and made a very satisfactory recovery until the elapse of nine days, when a recurrence of the previous symptoms set in. Thereupon a second operation was done with similar results, but the little patient died eight days later, and at autopsy there were found two ruptures, one of the hepatic duct and one of the gall bladder.

Duodenal Ulcer.—WILLIAM J. MAYO (*Annals of Surgery*, December, 1904).—With characteristic clearness and firm grasp of his subject Dr. Mayo describes his experience with fifty-eight cases. In operating for the condition, when it reaches the first portion of the duodenum, he makes the incision one inch to the right of the median line in order thereby to be able to examine the entire stomach, the biliary and pancreatic regions. A gastroenterostomy meets the condition by diverting from the diseased area the irritating gastric secretions. At present the posterior operation seems best to meet the indications, although, as Dr. Mayo expresses it, the last word has not yet been said. He makes a supplementary entero-enterostomy, and closes the afferent intestinal loop. He considers the matter of closing the pylorus to avoid secondary contraction of the gastro-enterostomy opening as being at the present day unsettled.

DIAGNOSIS.

IN CHARGE OF

A. E. TAUSSIG, M. D.

Differential Diagnosis Between Gall Stones and Cancer of the Pancreas.—E. ROCHARD (*Gazette des Hopitaux*, December 6, 1904).—Apropos of the recent unfortunate operation performed upon M. Waldeck-Rousseau, Rochard discusses the possibility of distinguishing between an icterus produced by a stone in the common duct and one due to a cancer of the head of the pancreas. Other causes of icterus, such as cirrhosis, adhesions, chronic pancreatitis and the like, can usually be readily excluded.

In calculus of the common duct, the icterus is usually sudden in its onset and often varies in intensity, whereas in pancreatic cancer it appears more gradually and, once established, does not vary. The shade of the yellow also differs in the two conditions, being a pure yellow in the former, and more like a greenish bronze (*vert bronze*) in the latter. The stool, while clay-colored in both diseases, is more apt to vary in its whiteness when the obstruction is due to a stone than when due to a cancer, for obvious reasons. The age of the patient gives us a hint, cancer being our first thought in the aged and stone in the young. An icterus of long standing is more apt to be due to stone, cancers of the pancreas being usually rapid in their growth. Nevertheless, pancreatic cancers have been recorded, in which the icterus lasted two years. A typical

history of colic is of the greatest value for diagnosis. Unfortunately, however, many cases of stone in the common duct run their course without any characteristic attacks of pain. The appearance of a cachexia or of ascites indicates a cancerous obstruction, whereas fever, due to a cystic infection, is more frequent when there is a calculus. Finally, a valuable distinction is expressed by the "Law of Courvoisier-Terrier": "In lithiasis of the common duct, which is almost always accompanied by cystic lithiasis, the gall bladder is retracted upon itself and consequently cannot be palpated. On the contrary, when the gall duct is compressed by a cancer of the head of the pancreas, the gall bladder is dilated. If, therefore, a careful abdominal palpation reveals the presence of a biliary tumor, the chances are that the icterus is due to a pancreatic cancer."

Unfortunately, none of these signs or symptoms are pathognomic, the diagnosis being possible only as the result of a careful consideration of all the data. It will often be difficult, occasionally impossible and will always require of the observer the exercise of his utmost diagnostic acumen.

Movable Kidney.—C. MANSELL MOULLIN (*Lancet*, December 10, 1904).—The condition known as movable kidney is far more common than is generally supposed. In fact, to a certain extent all kidneys may be called movable, an up-and-down movement of one or two inches being quite compatible with perfect health. A movable kidney becomes pathological only when the kidney does not spontaneously return to its original position when the diaphragm relaxes, but must be replaced either manually or by the patient assuming the recumbent posture. Such kidneys may simulate the most diverse lesions. The writer reports several cases in which movable kidneys produced symptoms closely resembling those characteristic of appendicitis, gastric ulcer, obstruction of the gall bladder and of the common duct. There is, however, one test which always enables one to ascertain whether the symptoms are produced by a movable kidney. When the patient is made to remain in the recumbent position, the symptoms are quickly relieved and usually disappear altogether if they are due to movable kidney. If due to organic disease, however, this change of position produces little or no effect.

A Hitherto Unnoticed Symptom of Graves' Disease.—S. JELLINEK (*Wiener klin. Wochenschr.*, 1904, No. 43).—The writer calls attention to a new symptom of Graves' disease, discovered by himself and H. Rosin. It consists of brown pigmentation uniformly distributed in the skin of both eyelids, but especially of the upper one. The discoloration extends upwards to the eyebrows and downwards to the infraorbital margin. The conjunctiva is not affected. It is not usually an early sign and is probably analogous to the other cutaneous pigment anomalies found in this disease and in myxedema. The blood, too, shows a characteristic change consisting in a striking disproportion between the amount of iron and of hemoglobin in the blood. Usually, whereas the number of red blood corpuscles and the percentage of hemoglobin are nearly normal, the amount of iron in the blood is considerably reduced.

Transillumination of the Stomach.—W. H. LINCOLN (*Brooklyn Med. Jour.*, 1905, No. 1).—The human stomach has been transilluminated for many years by various men since its inauguration by Einhorn. Owing to its uncertain results and to the fact that it can be used only in thin individuals, the method has, however, gradually fallen into disuse. About a year ago, Dr. Robert Coleman Kamp advocated the use of the Einhorn gastrodiaphane in combination with a substance which might increase the illuminating power of the lamp in the stomach. Such are quinine, a decoction made from the rind of the horse-chestnut and fluorescein. The last gives the best results. It is a naphthalin product, a deep red powder and has a greenish-yellow color in weak solution. It is absolutely non-toxic. The addition of glycerine seems to increase its fluorescence. It is best used in the proportion of one-eighth to one-quarter grain to a pint of water, a stronger solution making the mixture too opaque.

The examination should be made with the stomach empty. After the lamp has been introduced, the patient is made to drink a pint of water containing one-eighth grain of fluorescein, forty grains of bicarbonate of soda (the fluorescein being insoluble in acid solutions) and one or two drachms of glycerine. This solution does not deteriorate on standing. With the abdomen bared and the patient in dark room, the current is turned on and the outline of the illuminated stomach marked on the skin.

The writer has used this method on thirty patients with satisfactory results. He presents one case of extreme gastroptosis in which the outline of the stomach was apparently revealed more accurately than would have been possible with other methods. Modifications of the procedure will readily suggest themselves. Thus it will often be preferable to introduce the fluorescein solution before the lamp. Whether the method will ever replace inflation with air as a routine procedure seems doubtful, to say the least.

The Leucocyte Count in Appendicitis.—FEDERMANN (*Muench. Med. Wochenschr.*, No. 50, 1904). BERNDT (*Ibid.* No. 50, 51).—Now that the tendency to operate in every case of appendicitis without selection is on the wane, increased interest attaches to every method at our disposal for determining the nature and the degree of the infection. For this purpose a leucocyte count is of the greatest value, although a proper interpretation of its results is not always easy. Federmann analyzes a large number of cases, as a result of which he comes to the following conclusions:

1. Every perityphlitis in which an intense infection takes place produces a high grade of leucocytosis (20,000 or over) in the first days of the disease. This finding speaks merely for a severe infection and does not indicate the presence of pus, but does point to impending perforation or gangrene. It usually increases steadily during the first three days. If the systemic intoxication produces a diminution of the organism's power of resistance, the leucocyte count falls in contrast to the increased severity of the other symptoms. The more intense the infection, the earlier or the more striking is this disproportion between the low leucocyte count and the severe clinical symptoms. A simple appendicitis with little or no

involvement of the peritoneum rarely produces a leucocytosis of over 20,000. The drop in the leucocyte count is here accompanied by an amelioration of the other clinical symptoms.

2. A leucocytosis of over 20,000 early in the disease indicates immediate operation, as does also a low leucocyte count with beginning systemic intoxication. A count of from 12,000 to 20,000 without severe clinical symptoms does not speak either for or against operation.

3. After the first forty-eight hours a low leucocyte count with grave general symptoms signifies a bad prognosis. The bulk of all patients operated upon under these conditions die.

4. The practical usefulness of the leucocyte count in appendicitis depends upon the simultaneous consideration and comparison of all the clinical symptoms as well as of the number of days the disease has existed.

The above pretty well represents the present status of the leucocyte count in the disease, and this excellent article can be commended to the perusal of our readers. Berûdt, on the whole, agrees with these conclusions. He is inclined, however, to lay particular stress upon the pulse-rate. Where the pulse beats 100 to the minute at the onset of the disease, a severe infection is to be expected. If during the next 6–12 hours it remains at this height or rises, immediate operation is imperative. Even if the case is not seen until later in the disease, a pulse-rate of 100 or over should indicate operation.

We doubt whether this opinion will find many adherents. The pulse-rate is too individual a matter to justify such absolute conclusions. A pulse of 100 has very different significance in individuals whose normal rate is fifty and in those whose normal rate is ninety.

THERAPEUTICS.

IN CHARGE OF

WALTER BAUMGARTEN, M. D.

The Technique of Tape-worm Therapy.—BOAS (*Therap. Monatsh.*, December, 1904, p. 621) corroborates Sobotta's experience that felix mas is by far the most reliable therapeutic agent in removing taenia, provided it is given in sufficient doses and in an efficient manner. The method which he has employed for some years is based upon the assumption that the effect of the drug upon the parasite becomes greater the longer it remains in contact with it and the less it is diluted. For this reason he urges that purgatives should be deferred for at least six hours after the administration of the remedy, and considers that purgatives given at the time or within two hours after the remedy simply shorten the exposure of the taenia to its toxic action, and is "more pleasant to the parasite than to the patient." With Granitz, he warns against castor oil as a purgative for this purpose, because of the frequent toxic effects on the patient which follow its administration. He also objects to calomel on account of its uncertain action, but advises the use

of Epsom salts or an aperient water containing Epsom salts as its active constituent. Likewise, he deems a preparatory starvation and clearing up of the intestinal tract as unnecessary, unless, in regard to the latter point, actual constipation exists. In regard to the administration of the drug when it is not well borne by the stomach, he employs an emulsion of the extract in a solution of gum arabic; if, in spite of this precaution, nausea is still produced, he guards it with a hypodermic of morphine. The efficient dose for adults need not exceed five to eight grams.

The modus operandi is the following: The patient is allowed his usual diet on the day preceding the cure; if constipated, he is given a saline purgative, otherwise not. On the following morning he is given from five to eight g. of extract felicis mas on an empty stomach, after which he takes neither solid food nor liquids for six or seven hours, at the end of which time he is given a full dose of a saline purgative, preferably Epsom salts. No food is allowed until after the expulsion of the parasite. The patient is then at liberty to eat according to his inclination.

Urotropin as a Prophylactic Against Scarlatinal Nephritis.—Patchkowski (*Therap. Monatsh.*, December, 1904, p. 620), following the suggestion of Widowitz, employed urotropin as a routine measure in fifty-two cases of scarlet fever admitted to the Charlottenburg Municipal Hospital, with a consequent incidence of nephritis in 3.8 per cent. of the cases, as compared to 20.9 per cent. in the previous (not so treated) 225 cases in the same institution, and to 10 per cent. and 19.6 per cent. in two series of cases (358 and 393, respectively,) cited by Heubner. As an evidence of the severity of the cases in other ways, he notes that in eighteen cases exhaustive glandular suppuration occurred, and in twenty-two cases otitis media, all of which required operation. The dose ranged from 0.25 g. for children to 0.5 g. for adults, given three times a day. One group of cases (eight) received the drug daily for periods varying from ten to twenty-one days. In a second group of forty-four cases the drug was given for periods of four days with intermissions of equal length. Nephritis developed in two cases of the latter group; none in the former.

Advances in the Treatment of Diabetes Mellitus.—J. STRAUSS (*Deutsch. med. Wochenschr.*, 1904, No. 45, p. 1639) cites and reviews the recent changes in opinion in regard to the treatment of diabetes mellitus, based on studies in the metabolism of diabetics, and the methods which have been developed therefrom, dietetic, physical and medicinal, and also the attempts at organo- or ferment-therapy. We shall attempt to abstract in this issue only the dietetic methods of treatment, and discuss separately the carbohydrates, fats and proteids.

Based partly on empirical facts, partly on theoretical considerations, the opinion has gained ground that more carbohydrate food may be administered to diabetics than was formerly allowed, with the effect particularly of postponing or preventing the appearance of acidosis and the possible subsequent coma. On such a supposition a number of methods have been proposed. Winternitz and Strasser found that the enforcement of a strict milk diet would cause the disappearance of glycosuria in forty-eight hours, some cases having been completely cured, in the

sense that they became able to return to an ordinary mixed diet. This observation has been accepted, with substantial reservations, by Naunyn and others. They grant that many, even some severe, cases of diabetes bear small quantities (one-half litre) of milk well, but that, in general, diabetics react very variously to milk, or its essential constituent in this regard, milk sugar. This, as such, is well borne, but that part of it which is split up in the intestine is rapidly excreted in the urine. The quantity of milk sugar so split up depends upon the variable presence and activity of the milk-sugar-splitting ferment, which H. Strauss has demonstrated to be present in adults as well as in infants. v. Noorden holds that it is a mistake to attempt an exclusive milk diet in any case; that no definite rule can be laid down for its administration, but that the tolerance for milk must be determined for each individual case. He advises that milk be given liberally in mild cases in which it causes no increase in the glycosuria. Potatoes have been demonstrated by Mosse to cause a much less marked glycosuria than a quantity of bread containing an equivalent amount of carbohydrate. When an equivalent quantity of potatoes is substituted for bread in the dietary, the diminution in the glycosuria is marked, and is accompanied by diminished quantity of urine and a lessened thirst. Mosse has shown by examination of the urine and fæces that this diminished excretion of sugar is not due to poor absorption of the potato starch, and suggests that it may be due to the effect of the greater water content of potatoes and to the quantity of potassium salts which they contain. v. Noorden has shown that oatmeal, too, is better borne by diabetics than bread. He further observed the apparent paradox in a number of cases that as the quantity of oatmeal was increased the glycosuria not only failed to increase, but that it decreased, and that this decrease was accompanied by a diminution in the acetone and the ammonia contained in the urine. The cause for this increase in tolerance for starches v. Noorden is inclined to ascribe, as Mosse did for potatoes, to the presence of other substances in oatmeal, possibly the salts, which counteract the effect of the carbohydrate in the glycosuria. Oatmeal is best tolerated when it is given as the only form of carbohydrate, but unfortunately its prolonged use is made impossible by the aversion to it on the part of the patient which develops in eight to fourteen days. The technique of this method v. Noorden describes in the following way: Oatmeal is boiled for a very long time in water to which a little salt is added. To this is added butter and, after cooling, egg albumin. In a strict oatmeal diet the total quantity of gruel for the day prepared in this manner should contain 250 g. of oatmeal, 100 g. albumin and 300 g. butter. This may be given in small quantities every two hours, with, in addition, a little whisky or wine and some strong black coffee. The cases of diabetes which are most favorably influenced by the oatmeal diet, and the chief indication for its employment, are the severer forms with evident acidosis. The milder forms of the disease, without diacetic acid, or acetone, in the urine, are usually unfavorably affected, so that any tolerance which they may have for carbohydrates becomes impaired. In any case, the effect of this diet should be controlled by daily determinations of sugar and acetone. v. Noorden employs the method particularly in cases of severe glycosuria with pronounced acetonuria, in which the

ordinary strict diet fails to affect or intensifies the condition, and in which there is danger of impending coma. Carbohydrates aid in removing this danger, while their exclusion from the diet is undoubtedly an important cause of acidosis. v. Noorden considers oatmeal superior to other forms of carbohydrate food in this important group of cures, and L. Mohr considers v. Noorden's procedure the best means of combating high degrees of acidosis.

The knowledge that acetone appeared in the urine as an accompaniment of fat katabolism, and that it arose during this process, has not been followed by changes in the diabetic diet which one might logically expect. v. Noorden notes that the acetonuria following daily large quantities (150-200 g.) of fat tends in a week or two to approach the degree which existed before the larger quantity of fat was allowed, and Loehning doubts whether an acidosis, provoked in this way, is to be regarded with the same alarm as an acidosis occurring when fat forms no part of the diet. Huebner considers it expedient to allow as much fat as may be required to supply the necessary carbon to the organism. Though butter contains more volatile fatty acids, from which the acetone is mainly derived, than other forms of fat, v. Noorden prefers it because it is more palatable, and suggests that it may be rid of the greater part of its volatile fatty acids by thorough washing.

That the glycosuria in diabetes may be increased by proteids has been recognized by all investigators, and for this reason it has been insisted that the quantity of proteids as well as of carbohydrates should be definitely laid down for each individual case. Cantani and Naunyn consider 500 g. per day of cooked meat as sufficient for any diabetic, and think that nothing is to be more avoided than an overloading of the general metabolism with proteid. According to v. Noorden 120 to 140 g. of proteid per day may be given in the mild forms of diabetes, but in the severer forms in which exclusion of carbohydrates fails to free the urine of sugar, this quantity should be reduced to 70 to 90 g. per day. Kolisch contends that the proteid diet should be reduced to the lowest quantity at which the individual will remain in nitrogen-equilibrium. He also notes that the diabetic organism has so adjusted itself that it requires a smaller number of calories per kilo of weight than the normal individual, and Naunyn also points out that diabetics live for years, and even put on weight on a diet of far less caloric value than is required in health. v. Noorden, as well as Kolisch, emphasizes that some mild cases of diabetes may be made sugar-free by reducing the quantity of proteid without restriction of the carbohydrates, and Lenne insists that in the mild as well as the severe forms, the proteids be reduced to the lowest possible minimum. The form of proteid which is least unfavorable depends largely, according to v. Noorden, on the idiosyncrasy of the individual, and must be determined for each case. He states, however, that restriction to one form of proteid, as far as it can be carried out, reduces the glycosuria more promptly than when proteid is given in various forms. He considers the vegetable proteids and eggs as in general the least deleterious.

PATHOLOGY AND BACTERIOLOGY.

IN CHARGE OF

CARL FISCH, M. D.

The Anti-Bodies of Streptococcus and Pneumococcus Sera.—F. NEUFELD and W. RIMPAN (*Deutsche Med. Woch.*, 1904, No. 40).—Neufeld and Rimpan demonstrate in this article that there can be present in immune sera three substances, different in character and action. To the antitoxin and bactericidal action, they add a third function of specific character. It consists in a phagocytosis occurring by the interaction of immune serum and of leucocytes under certain conditions, that experimentally can be studied. Neufeld immunized rabbits against a virulent streptococcus, and found that in the immune serum thus produced streptococci were taken up by the leucocytes derived from normal rabbits. Similar experiments have been made before by Denys and Leclef, and Metschnikoff had explained the action of such a serum as a stimulation of the leucocytes. The authors object to this explanation, and find that the bacteria are made less resistant by taking up from the immune serum a substance relatively thermostabile, and called by Pfeiffer immune substance. Only after this union, the bacteria become accessible to the phagocytic function of the leucocytes. The same results were obtained for pneumococci; the conditions were the same in the animal body and in the test tube.

Studies in Phagocytosis.—L. HECTOEN and G. F. RUEDIGER (*Jour. of Infect. Diseases*, Vol. II, No. 1).—The question of phagocytosis to which the preceding review referred has been greatly stimulated by Wright and Douglas by their experiments, published in 1903 and 1904, on the effect of normal serum and plasma on this process. Hectoen and Ruediger have extended the line of these investigations and have come to very important results that certainly demonstrate the existence of such substances, called by Wright opsonins, and introduce us into some of their biologic qualities. Following Wright's method of controlling the degree of phagocytosis they come to the following conclusion:

1. Phagocytosis of many bacteria by leucocytes of various normal animals, including man, is dependent upon the presence in the plasma of special substances designated by Wright and Douglas as opsonins.

2. The opsonins become attached to the bacteria, which will for unknown reasons become susceptible to phagocytosis.

3. The opsonins in the blood of one species may sensitize for phagocytosis by the leucocytes of a different species.

4. Opsonins are thermostabile substances of a constitution analogous to that of the toxins and complements in that they seem to have two groups, haptophorous and opsoniphorous; by heating sensitized bacteria, the latter group appears to be destroyed, but the inactive opsonins by saturating the bacteria prevent further sensitization by fresh serum.

5. Like complements, opsonins may be neutralized or bound by various salt solutions and other substances, so that they cannot act upon bacteria. Antiphagocytic action of this nature may be an important factor in

the establishment and progress of various infections, especially those caused by streptococci, pneumococci and other microbes, in the destruction of which phagocytosis is an important factor.

Antibacteriolytic (Antagonistic) Substances of Normal Sera.—A. PFEIFFER and E. FRIEDBERGER (*Deutsche. Med. Woch.*, 1905, No. 1).—Pfeiffer had been able by the injection of immune serum to produce antiamboceptors for the cholera amboceptors. Certain clinical observations during infectious processes, suggested the thought of the presence of such anti-amboceptors, of course of heterogeneous type, since with the normal presence of amboceptors (in Pfeiffer's case for cholera bacilli), antiamboceptors were excluded. In the course of very careful and exact experiments, that Pfeiffer and Friedberger instituted in this direction, they succeeded in positively demonstrating in normal sera substances that were antibacteriolytic, that is, prevented the bacteriolysis by an immune serum. The more exact analysis, however, showed that there were no antiamboceptors, and could not be anticomplements either. Their specificity obtains only for the species of bacteria used, not for the species of animal from which the serum is taken. They act even on the anti-immune body of an animal that is immunized after the serum was taken. For them the law of multipla does not obtain, and their union with the amboceptor is not firm, as secondarily added amboceptors will dissociate this union. The authors conclude that these substances form a new so far unknown category of serum constituents, and call them bacteriolytic antagonists. They do not enter into the possible function they may have to fulfill, but it is reasonable from Pfeiffer's previous work to believe that the assumption is this: The antagonists prevent invading bacteria from being disintegrated and distribute their endotoxin into the fluids of the body. Instead, their amboceptors being occluded they become, like saprophytes, the prey of phagocytes, and are made innocuous by digestion within the protoplasm of these cells. Whether they are identical with Wright's opsonins is not clear. Hecteon's researches, if correct, would exclude this idea.

A New Method of Obtaining Anti-Bodies.—F. LOEFFLER (*Deutsche. Med. Woch.*, 1904, No. 52).—As is well known, McFadyan utilized freezing of bacteria and triturating them in their fragile frozen condition to a fine powder, for the purpose of extracting from these comminuted cells the body toxins. Loeffler asked himself if drying of bacteria and heating them to a degree that they were killed would retain their power of setting up reactions in animals infected with them. His first experiments were made with egg albumin, serums, etc., that were dried and heated to 150 degrees C. The investigation with this material showed the production of specific precipitins and agglutinins. Bacteria then were treated in the same way, finely pulverized, and their suspension used for the inoculations. It was found that the specific toxicity of these substances was not destroyed (snake venom behaved the same), and the agglutinative and bacteriolytic quality of the sera thus obtained was very high. Aside from the theoretic interest of these findings, that have been known to obtain for ferments for a long time, the importance lies in the absence of danger and in the easiness in which, in the future, immunization

can be carried on There has been a difference of opinion about the immunizing qualities of living or killed bacteria, Pfeiffer maintaining that only living, virulent bacteria could be considered in this respect for immunizing purposes. Wassermann, however, has already shown for agglutinins, at least, that the same degree of immunity can be produced by using killed bacteria of low virulence. Further investigation must be made to show which view is theoretically correct. For practical purposes, where it is not necessary to bring about a high degree of bactericidal or other immunity, Loeffler's method seems to be the solution of many difficulties that have opposed a more extensive use of prophylactic immunization.

Advantages and Disadvantages of Ficker's Typhoid Diagnostic.—W. J. Guettler (*Berl. Klin. Woch.*, Nos. 51 and 52).—This paper cannot be reviewed with a few remarks, and it is mentioned only to call attention to a source in which a very accurate and impartial elucidation of the methods can be found to make the Widal test really a diagnostic. It would lead too far to enter into the objections that must be made against the methods used generally, and it may be sufficient to say that theoretically of a hundred tests made the result can only be considered in a small minority as having any meaning. Only in a very few cases the examiner makes a diagnosis; the seeming correctness of his positive reports, as compared with the clinical symptoms, does not prove that the latter are justly interpreted. The dilution of the blood or serum that ordinarily is employed, does not allow the assumption of a typhoid infection in a single case. Ficker's reagent is more scientific than the ordinary methods, but in many ways it, too, lacks the definiteness of the experiment that bacteriology teaches is the expression of the recognized workings of the reaction. The Pseudo-Widal reaction has done much good by directing attention to the great frequency of cases of typhoid otherwise unrecognized. It has led to their recognition, but has not diagnosed them, and in many cases it has led, and still leads, to faulty conclusions. Statistics built on it are of no definite value, no more than are clinical statistics. The difficulties and the precautions with which the agglutination test must be surrounded in order to give a decisive answer may be well learned from this paper.

GYNECOLOGY AND OBSTETRICS.

IN CHARGE OF

HUGO EHRENFEST, M. D.

A Pregnancy Reaction of Fetal Organs and Their Puerperal Involution — J. Halban (*Zeitsch. f. Geb. u. Gyn.* vol. liii., H. 2).—This paper forms a most noteworthy contribution to medical literature. It brings up for consideration an absolutely new problem which demands the full interest of both the embryologist and obstetrician. The author bases his deductions upon very painstaking investigations and upon a most ingenious

interpretation of older observations. For obvious reasons it is impossible to describe them here in full and give an exact outline of the logical way in which the author reaches his conclusions.

Pregnancy effects certain characteristic changes in various organs of the pregnant woman. The most striking are the hypertrophy of the uterus, the formation of decidua, the changes in the breasts and alterations in the constitution of the blood. Almost identical changes can be found in the same organs of the new born infant. These abnormal conditions gradually disappear with the beginning of the extrauterine life. The infant's uterus soon becomes smaller; the same is true for the breasts, his blood more and more resembles histologically and chemically the blood of the full grown. In Halban's opinion the changes in the maternal system are due to the products of an internal secretion, originating from the chorion epithelium. These same substances affect in a similar way the fetus *in utero*. They are of a toxic nature, cause, under normal conditions, the typical molimina of pregnancy, and if aggregating to a pathological degree produce the intoxications of pregnancy, *e. g.*, eclampsia.

The Etiology, Prophylaxis and Treatment of Uterine Rupture During Labor.—N. IVANNOFF (*Annales de Gyn. et d'Obst.*, August, September, October, 1904).—In this lengthy but very carefully prepared paper the writer considers uterine rupture in all its various aspects. His conclusions are based upon 124 cases that were observed in the Moscow Maternity in 118,581 confinements. Concerning their etiology the author classifies his cases in six groups. Those complicating: (1) Placenta previa, (2) transverse position, (3) hydrocephalus, (4) contracted and deformed pelvis, (5) vertex presentations that necessitate operative interference, and (6) pathological conditions of the uterine wall. Interesting is the author's statement that the majority of ruptures which occur in cases of placenta previa and transverse position are directly due to violence at the time of operative interference, while in cases of hydrocephalus and in contracted pelvis the greater number of the ruptures appear spontaneously. Modifications in the elastic tissue of the uterine wall play no role in the etiology of rupture. The last of his fifteen theses reads as follows: The therapy of every uterine rupture during labor should be operative; this alone offers the possibility of arresting hemorrhage and cleansing both wound and peritoneal cavity.

Injuries of the Uterine Wall and Rupture During Childbirth.—K. BAISCH (*Zentralbl. f. Gyn.*, No. 50, 1904).—In a patient, thirty-two years of age, after delivery of the eighth child, the uterine wall was perforated with the finger when a placental polyp was removed. Recovery with slight elevation of temperature within eleven days. Two years later a pregnancy was prematurely interrupted on account of a placenta previa. An atonic hemorrhage followed which necessitated the extirpation of the uterus. On the place of the old perforation a thin scar without a trace of muscular elements was found. Such findings throw much light upon the etiology of unexpected rupture of the uterine wall either during pregnancy or confinement.

The Loss of Blood During Menstruation.—HOPPE-SEILER (*Zeitsch. f. phys. Chemie*, Bd. xlii, H. 5, and 6; rev. *Zentralbl. f. Gyn.*, No. 1, 1905).—The writer ascertained in a very exact way the real loss of blood during menstruation. The menstruating woman was kept in bed. The blood was carefully collected on vulvar pads, which then were thoroughly rinsed in water. By determining the percentage of hemoglobin in this fluid and comparing it with the amount of hemoglobin in the patient's blood, the total loss of blood could be calculated with considerable accuracy. The figures found in this manner are very interesting. In marked contradistinction to prevalent views it was ascertained that a woman during normal menstruation loses on an average but 37 cc., a little more than one ounce; in cases of menorrhagia, *e. g.*, on account of a metritis, the amount rose to 376 cc. within three days. Fever seems to reduce the menstrual flow. A girl with an average of 41.5 cc. pro menstruation lost during an attack of fever only 14.8 cc. Text-books as a rule place the amount lost during a normal menstruation as between 90 and 240 cc.

Three Cases of Cancer Complicating Advanced Pregnancy.—HERBERT R. SPENCER (*Jour. of Obst. Brit. Emp.*, December, 1904).—The writer gives the histories of the following three cases which are of unusual interest.

Case 1.—Patient was delivered March 25, 1893, with forceps, of a fully developed child. Just two weeks later a malignant growth was detected on the anterior lip of the cervix, which, by microscopical examination was found to be a squamous epithelioma. April 8, 1893, the cervix was removed by high amputation. Uninterrupted recovery. Latter part of 1894 she again became pregnant, therefore Porro's operation was performed at the end of pregnancy. Both mother and child recovered. In July, 1904, the patient is still well and free of recurrence, eleven and a quarter years after high amputation of the cancerous cervix.

Case 2.—On January 9, 1896, premature labor was produced in seventh month of pregnancy. On January 28th the carcinomatous cervix was removed by high amputation (squamous epithelioma). Uninterrupted recovery. On August 9, 1904, eight and one half years after the operation, the patient was found well without recurrence.

Case 3.—On June 30, 1896, four months after a normal confinement, the cervix was removed by high amputation for a squamous epithelioma. Prompt recovery. August 6, 1904, more than eight years after the operation, the patient is perfectly well.

In concluding his very instructive paper, the writer ascribes the remarkable success in his three cases to the use of the thermocautery and to the fact that the operations were performed during the puerperal state when the tissues were undergoing involution. In the author's opinion the total extirpation of the uterus should be limited to cases of sepsis or when the peritoneum was extensively opened during high amputation or uncontrollable hemorrhage is met with. If possible the operation should be postponed until two weeks after the expulsion of the fetus.

PEDIATRICS.

IN CHARGE OF

ALFRED FRIEDLANDER, M. D.

Recurrent Vomiting.—RACHFORD (*Arch. of Ped.*, December, 1904,) defines this as a symptom group closely allied to migraine, autotoxic in origin, and characterized by recurrent attacks of nausea, persistent vomiting and great prostration. The great majority of these cases occur in infancy and early childhood, the condition being most common between the third and tenth years. The tendency is to spontaneous recovery, but the attacks may continue into adult life, being transformed into migraine. Heredity is the most important predisposing factor. A family history of migraine or gout is present in nearly every case, and a general neurotic inheritance is common. Constipation is certainly an important predisposing factor, and the resulting intestinal toxemia doubtless contributes largely to the general irritability of the nervous system. Mental overwork and nerve excitement combined with indoor life are certainly predisposing causes, and so most of the cases occur in the rich and refined.

It is generally agreed that recurrent vomiting is an autointoxication, the author holding that both auto- and intestinal toxins may be factors. The acid intoxications which occur during the attack are to be considered as effects rather than as causes. Functional incompetency of the liver is of great importance in the production of the condition. The liver is unable to fulfill perfectly its function of converting ammonia and the purin bodies into urea. It is more than probable that the toxins in these cases are either identical with or closely related to the purin bodies.

Of direct, exciting causes of attacks, mental fatigue and excitement, nervous strain, fright and anger are common. Overeating is another common cause, overindulgence in highly acid foods being among the potent factors. Reflex irritations of various kinds may also act as exciting causes, but it is to be remembered that there must always be an underlying basis of autointoxication.

Symptoms.—Prodromal symptoms, such as general restlessness, nervous irritability, sleeplessness, malaise and a peculiar, sweetish odor of the breath are often noted. Vomiting is the most characteristic symptom of the attack itself. At first, food only is rejected, but after twenty-four hours the vomiting becomes very severe; is accompanied by constant nausea. Bile and blood-tinged mucos are expelled. This vomiting may continue from one to six days, the attack ceasing as suddenly as it came on. Convalescence is ordinarily rapidly established, and no further symptoms are noted until the next attack. The interval between attacks is from two to six months. The constipation which precedes the attack usually becomes exceedingly obstinate during the attack, and when it is relieved the stools are putrid. During the attack there is never any desire for food, but thirst is always extreme. Rapid emaciation is the rule, and prostration is usually marked. There is al-

ways more or less fever. The tongue is usually dry, and the peculiar acetone odor of the breath marked. Toward the end of the attack somnolence is usually present, as in the case of the close of the migrainous attack.

The urine is concentrated, strongly acid, showing excess of the xanthin bodies, and acetone and indican in all of the severe cases.

Treatment.—If seen in the prodormal stage, one-quarter grain of calomel and five grains of bicarbonate of soda should be given every half hour until two grains of calomel are given. This should be followed by a saline laxative, and later by benzoate of soda in three to eight-grain doses every three or four hours. No food whatever should be given, though water is allowable if it can be retained. In the attack proper a high rectal enema of bicarbonate of soda solution, a tablespoonful to the pint, should be given every eight hours. In the worst cases normal salt solution may be given hypodermically, and very small doses of morphia, also hypodermically.

The curative treatment embraces outdoor life with moderate exercise. Often a change of climate, the warmer southern climates being preferred, acts very well. The diet must be carefully restricted; raw fruits, acid vegetables, stimulants and sweets are interdicted. Milk, cocoa, vegetable soups, cereals, cooked fruits, eggs, fish, chicken, mutton and occasionally beef are allowable. The constipation is to be relieved at first by palatable saline mixtures, later by mixtures of rhubarb and cascara. So far as drugs are concerned, the salicylate and benzoate of soda, in appropriate doses, and put up with essence of pepsin, are of great value, and should be given for long periods of time.

On Sudden and Unexpected Death in Children.—This subject was up for discussion at a recent meeting of the British Society for the study of diseases in children. An abstract of this discussion forms the subject of an editorial in the *British Jour. of Chil. Diseases*, January, 1905. Two important facts were brought out prominently at this meeting. First, that sudden death may occur in every known disease of importance and, second, that sudden and unexpected death in childhood is relatively frequent. Deaths from asphyxia, from the overwhelming of the respiratory centers by toxins of various kinds, would appear to occur rather frequently. The toxins of the acute infectious diseases would appear to be very active in this class of cases, sudden death after diphtheria being illustrative of the case in point. It is noteworthy that sudden death from the toxin of typhoid, not suspected during life, is not rare. According to MacAlister, sudden death from heart disease is relatively infrequent. Instances of sudden death from uncomplicated rheumatic myocarditis were recorded.

Parkinson, in discussing sudden death from functional causes, alluded to fright as a possible cause. He was inclined to believe that death in the early stages of chloroform narcosis might at times be ascribed to this cause.

Walker discussed the question of enlarged thymus and status lymphaticus. He believed the lymphatic hyperplasia in these cases was a reaction to chronic toxemia.

Tubby opened the discussion on sudden death from surgical causes. He dealt with the subject under the headings of the following causes: circulatory, shock, toxemic, infectious, mechanical, nervous and rare and unusual causes not comprised under any of the above sections.

Cases of sudden death in rickety children immediately following exploratory chest puncture (*e. g.*, for suspected empyema) were also reported. Such fatalities have been explained on the basis of reflex inhibition of the cardiac and respiratory centers, due to irritation of small branches of the vagus by the exploring needle.

Various other causes of sudden deaths were reported, and the discussion certainly drew attention to the fact that a variety of unknown toxic conditions may be responsible for sudden and unexpected death in childhood.

Concerning Buttermilk in Infant Feeding.—At a recent meeting of the Lower Rhenish Pediatric Society Cantrowitz (*Centralblatt f. Kinderheilk.*, January, 1905) took up the question of the relation of buttermilk feeding to rickets, concerning which reports have appeared of late. From 100 babies fed on buttermilk, he selected those in which this food had been used at least two months, also finding several who had taken buttermilk at least a year. In thirty-seven cases, he found evidences of rickets ten times, but, as he was able to show, distinct etiological factors of rickets existed in all of these. Until better proof of the connection of buttermilk feeding and rickets can be shown, he holds that it would be a mistake to abstain from buttermilk in suitable cases, in view of the excellent results that have been reported from its use by so many observers.

As ordinarily given, wheat flour is added to the buttermilk [in the proportion of a tablespoonful to the litre. A small quantity of cane sugar is added and the whole mixture boiled.—Ed.]

According to Cantrowitz this addition of flour is not absolutely necessary. In fact, if a diminished power of starch conversion have previously existed, such addition may give rise to intestinal disturbances. In order to prevent the lumping of the buttermilk, which is apt to occur if it be heated without the addition of flour, the heating must be done very gradually, over a slow fire and under constant stirring. The flour free buttermilk has been found to be just as digestible as the mixture with the flour added. Depending upon the nature of the pre-existing intestinal disturbance (insufficiency of fat or starch digestion), the buttermilk may be advantageously modified by the addition of cream or wheat flour.

Disturbances of Digestion in Infants Resulting From the Use of Too High Fat Percentages.—Holt (*Archives of Pediatrics*, January, 1905) thinks that disturbances of digestion resulting from an excess of fat are quite as serious, if not quite as obvious, as those which follow the use of too high proteids. The high fat percentages in the food may arise from the use of an over rich milk, or from the intentional increase of the fat in order to overcome constipation. From the study of a series of cases, Holt concludes that gastric complications, such as habitual vomiting, continued fermentation, with the production of gastric catarrah, are not

the only sequelæ of high fat percentages. Disturbances of intestinal digestion may also occur, and it is noteworthy that chronic constipation may also be greatly aggravated by such feeding. The hard, dry, gray stools passed under these conditions may consist almost entirely of undigested fat. In some of the cases severe nervous symptoms also occurred. There is, however, no arbitrary standard as to the amount of fat which may be given to healthy infants, inasmuch as children differ in their capacity to digest fats as in other respects. Personally, the author has never seen any benefit, but often very much harm, from raising the fat above four per cent., and in his practice he has fixed upon this as about the limit for the average child. When there are symptoms of either gastric or intestinal indigestion, the fats should be reduced much below this figure.

Study of Three Hundred and Forty-Six Cases of Typhoid in Childhood.—THIEBAUX (*These de Nancy, Arch. de Med. des Enf.*, December, 1904) finds that in the last few years the cases of typhoid in childhood (in his hospital) have been diminishing in severity. All the symptoms as found in adults are met with, but the picture is not at all uniform. Even the most characteristic symptoms, such as the roseola, the stupor, the diarrhœa, are not constant. The temperature is more irregular than in adult life, the pulse more rapid. Pulmonary involvement is relatively rare. Convalescence presents two interesting phenomena—desquamation and extreme emaciation. About half the cases were mild. Relapses were frequent, usually not severe, and often due to infraction of dietetic or hygienic regimen. Complications were, relatively speaking, not frequent. The mortality was about that of other hospitals. (Actual figures not given.—Ed.). The diagnosis is often very difficult, on account of the great number of atypical forms.

ORTHOPEDICS.

IN CHARGE OF

NATHANIEL ALLISON, M. D.

Dislocation of the Patella, with Rotation on Its Horizontal Axis.—WILLIAM S. CHEESMAN, Auburn, N. Y. (*Annals of Surg.*, January, 1905).—Dislocations of the patella with rotation on its perpendicular axis are not specially rare. Here the bone is revolved through 90 degrees, and rests on edge in the groove between the femoral condyles, or it may be completely turned over and have its articular facets looking directly forward. Dislocation with rotation on the horizontal axis is very rare. The author could find but five reported cases. He reports a case himself, that of a boy who fell from a moving train. Examination showed the lower edge of the patella pointing directly forward and the upper edge firmly wedged in the notch between the tibia and femur. Three attempts were made to reduce the dislocation, but open operation had to be resorted to. The quadriceps tendon was torn entirely from

the bone, and the upper border was so firmly jammed into the space between the femur and tibia that it was necessary to pry it out with a blunt dissector, introduced through a slit in the tense ligamentum patellæ to the under side of the bone. The five reported cases are reviewed and the author notes the fact that in only one of them was it possible to affect reduction by manipulation.

Notes on Achondroplasia (Chondrodystrophia Fœtalis), with Particulars and Skiagrams of a Case.—Harold Balme, M. R. C. S., L. R. C. P., and A. D. Reid, M. R. C. S., L. R. C. P. (*London Practitioner*, December, 1904).—Before Parrot wrote his description of this disorder and gave to it the name of Achondroplasia (1878), many cases had been observed and well described under the impression that they were cases of *congenital rickets*, the so-called fœtal rickets. Since his monograph was written much has been done on the pathology of this condition, and cases are now recognized and differentiated from rickets and cretinism. The *Encyclopedia Medica* defines achondroplasia as a fœtal disease, which causes a defective growth of certain of the bones in utero, and leads to congenital dwarfing of the extremities, and other deformities, which exist through life. Nothing is known of its ætiology; syphilis and prenatal influences are unsubstantiated suggestions. Clinically the features of the disease are seen immediately when the child is born; this makes it unlike rickets, and these features are a large square head and a long body with short limbs. The long bones are stunted and the hands present the "main en trident" of Marie, that is, they are short and fat and the fingers radiate like the spokes of a wheel. Should the patient survive birth and attain adult life, he is usually strong and healthy and his mental powers are unimpaired—unlike cretinism. Other congenital deformities are often associated, such as high-arched palate, congenital hernia or congenital dislocation of the hip. On the pathological anatomy, Parrot, Barlow and Kaufman have given most of the data, and are responsible for most of the theories. The deformed head is due in the great majority of cases to premature synostosis, thus it is found that the inter-parietal portion of the occipital bone (which develops in membrane) is large and expanded, while the supra-occipital portion (which develops in cartilage) is much stunted. As to the long bones, they are hard and compact, free from rarefaction or other osseous change; the diaphysis is expanded at its extremity, the line of ossification is perfectly clear and well marked, and is encroached upon by outgrowth of neither bone nor cartilage. Barlow suggested that there might be a "periosteal inclusion" between epiphysis and diaphysis, or that the cartilage cells were abnormally arranged along the line of ossification. Parrot considered the deformity due to the cartilage having lost its osteogenetic power (hence his name achondroplasia). The authors report a case and show beyond doubt that these cases are not cases of congenital rickets. The excellent skiagrams show the described enlargements of the diaphyses.

The Treatment of Acute Anterior Poliomyelitis by Nerve Transplantation.—Wm. G. Spiller and Chas. H. Frazier, Philadelphia (*Jour. Am.*

Med., January 21, 1905).—In selected cases of poliomyelitis anterior nerve transplantation is an operation which is fast coming to the front as a desirable procedure. The authors of this contribution conclude that it is not permissible to operate on the nerves within three or four months after the development of the paralysis, because during that time it is not possible to determine accurately which muscles will recover their function and which will not. The muscles which remain paralyzed after six months are not apt to regain their power and the opinion is expressed that after six months is the best time to operate, though good results may follow the operation at a much later date. Two cases are reported that responded well to nerve grafting. The first presented paralysis of the anterior tibial muscle alone; here the peroneal nerve was exposed and the fasciculus of nerves supplying the upper part of the anterior tibial muscle was grafted into the musculo-cutaneous. In a little over a month the improvement was marked. The second case presented paralysis of the peroneal group of muscles, here the musculo-cutaneous was grafted into the anterior tibial nerve, the improvement which followed was very satisfactory.

Congenital Dislocation of the Hip—An Argument Concerning the Method of Its Treatment.—HARRY M. SHERMAN, A. M., M. D., San Francisco (*Jour. Am. Med.*, January 7, 1905).—As an argument this contribution is very strong on the side of open operation. The writer states that since 1898 he has made but one attempt at manipulative reduction; the twenty-eight hips treated by him have all been submitted to reduction by arthrotomy. The oldest of these was eleven years, the youngest ten months. Between these ages there were three in the second year of life, three in the third year, five in the fourth year, one in the seventh year, one in the eighth year, one in the ninth year and one whose exact age is not known, twenty children in all. In each instance the femoral head was put in the acetabulum, cartilage to cartilage. Seventeen hips are known to be in stable position with the heads in the acetabula, at times varying from two months to six years after operation. In three the result is not known, in eight there is either reluxation or subluxation. In considering the so-called "bloodless" operation of Lorenz the writer describes the dangers of fracture, of paralysis, of gangrene, and states that his experience with the operation would go to prove that a very much smaller percentage of cases are reduced anatomically, or even made better functionally than is claimed by Lorenz. He denies that there is any good in the "anterior transposition" and is reminded of a quotation of Bret Harte, "He done his level best," when considering the attitude of some surgeons toward the manipulative operation. What keeps the head from entering the acetabulum in the Lorenz operation is the contracted capsule. In all the arthrotomies done it was perfectly evident that the head could not be forced through this contraction without much laceration and great danger. Looking at it from a surgical point of view the violence is not justifiable when the head can be replaced accurately without any danger to the patient, but the very slight danger of sepsis. He says, "It seems to me to be sensible to really reduce a dislocation when we start out to do so, and choosing a more difficult and

devious instead of an easier and more direct method is very much like making a feat out of a surgical procedure."

Typhoid Coxitis, with Report of a Case, with Skiagrams.—JOHN L. PORTER, M. D., Chicago (*Jour. Amer. Orthoped. Ass.*, October, 1904).—The case reported is that of a boy of ten years who ran a rather severe typhoid. After he had been ill for five weeks he had a marked chill, and pain in the left thigh and hip. The thigh became flexed and very sensitive and near the trochanter a red spot appeared which ruptured and discharged a quantity of thin, yellow pus. This sinus remained open and the joint began to improve. About a month later the other hip became sensitive, the thigh was drawn up, and the boy had a temperature for about ten days. He recovered and got about, the sinus leading to the first affected joint closed and the hip regained almost normal motion. The other hip, however, is flexed to an angle of 90 degrees and is dislocated. The adductors were divided and the deformity forcibly corrected. The author is of the opinion that in this case nature has distinctly pointed out that early evacuation of the joint is the required treatment. Both joints were involved, but the one that discharged spontaneously recovered with almost perfect motion, while the other became dislocated, extensive destruction occurred in the acetabulum and femoral head, resulting in very limited motion. In a patient weakened by a prolonged typhoid, with sensibilities somewhat odtunded, it is easy to see that a slowly progressive synovitis, with little pain, might proceed to a considerable degree without being noticed. Over 50 per cent. in Keen's series of eighty-four cases had spontaneous dislocation. Little is known of the bacteriology. To fill the gap in our knowledge here these joints must be aspirated at intervals, beginning with the acute onset and cultures made from the fluid thus obtained.

The So-Called Ischemic Paralysis and Muscular Contracture.—H. SCHRAMM (*Wiener Wochenschrift*, 1904, No. 27).—This condition is usually the sequel to a fracture of the lower end of the humerus or upper end of the radius or ulna where too tight a bandage has been applied perhaps too soon after the injury. Plaster of Paris treatment of fracture as above is prolific of this condition. It is not hard to make the diagnosis. The history and the early contractures rule out radial or infantile palsy and the like. The bandage being removed we see the symptoms and signs immediately; the hand and fingers are blue and cold and in a few hours contract, this contraction going on till the finger nails are often firmly planted in the palm of the hand; the forearm atrophies, the growth of the bones is retarded and the muscles feel like small hard bands. Volkmann contends for the ischemic theory as an explanation and likens the process to rigor mortis. Traumatic muscle inflammation, lesions of the nerves or the lack of proper circulation are other suggestions as to pathology. The condition is rare, Schramm being able to find only twenty-six cases in European literature; nineteen of these were in children under eighteen years of age. He reports one himself. Up to ten years ago the treatment was largely expectant and the prognosis was consequently grave. Today, however, the condition is treated as are other forms of paralytic deformity; tenotomy, tendon grafting,

excision of muscles and resections of ankylosed joints have all been done with success.

NEUROLOGY.

IN CHARGE OF

SIDNEY I. SCHWAB, M D.

The Pathology of Infantile Paralysis (Acute Anterior Poliomyelitis).—BATTEN (*Brain*, Autumn, 1904).—This investigation into one of the most puzzling pathological problems in neurology was undertaken to prove that the principal lesion in these cases is a thrombosis or embolism of the blood vessels of the anterior horn. Three cases were studied. The first died on the thirteenth day after the onset of the disease, the second died three months after the onset and the third two years after the onset. The conclusions of the author are: (1) That the condition is due to a primary thrombosis of a branch or branches of the anterior spinal artery supplying the gray matter of the anterior horn. (2) That such thrombosis may be produced by many and various forms of infection and the disease is not due to a specific special infection. (3) That the condition is more likely to occur in the lumbar region owing to the blood supply of this portion of the cord being at a point most distant from the heart and the long course of the reinforcing arteries.

The Influence of the First and Second Dentition Periods in the Etiology of Epilepsy.—SPRATLING (*Medical News*, December 10, 1904).—In this paper, which is based upon the careful study of some two thousand cases of epilepsy, studied from the point of view of etiology, Spratling considers the effect of the phenomena of dentition upon the causation of convulsions and the subsequent development of genuine epilepsy. These conclusions are noted: 1. Difficult dentition, that is the piercing of the gums by the tooth, may, in suitable subjects, constitute a sufficient irritant to cause convulsions 2. In suitable subjects these convulsions may lead to epilepsy. 3. By suitable subjects is meant infants who inherit a neuropathic tendency to disease; whose parents had epilepsy or insanity, or who were alcoholic or suffered from some other general vice that could be transmitted to the offspring in some form capable of vitiating its powers of resistance to disease. 4. Difficult dentition alone in a child who inherited no ancestral taints and who at birth is free from a tendency to nervous disease cannot cause epilepsy. 5. Great caution must always be exercised to lay the true cause in cases of this kind where it belongs, for the reason that gastro-intestinal disorders, the sequelæ of eruptive fevers and other factors common at this age may produce similiar results.

The Paralysis-Tabes-Syphilitic Question.—KURT MENDEL (*Neurolog. Centralblatt*, January 1, 1905).—Three cases are described which throw

light on the syphilis-tabes question. Case one is that of a ten-year-old boy whose father had syphilis and at present presents the typical picture of tabes. The mother became infected from the father and developed dementia paralytica. The boy now presents all the symptoms of a progressive paralysis. The cerebro-spinal fluid in this case showed a lymphocytosis. The second case is that of a boy seventeen years old. At ten years of age symptoms began to develop which later showed themselves in the form of a tabo-paralysis. This boy's mother was specifically infected by the father. The third case is that of a man sixty-nine years of age who developed tabes at the age of sixty-seven. This man was specifically infected at the age of fifty-two. These three cases are so clear in their origin that they should be of some interest in the statistics of this question.

Tendon Reflexes and Sensory Disturbances in Tabes Dorsalis.—BREGMAN (*Neurologisches Centralblatt*, January 1, 1905) reports three cases of tabes dorsalis in which there was found this peculiar condition: Absence of achillis reflex, presence of knee-jerk and the presence of sensory changes in the lower extremities. The author sees in this peculiar distribution of symptoms, possible sources of early segmentary diagnosis in respect to the localization. In these cases there were symptoms pointing to the so-called cervical form of tabes, so that it is a justifiable conclusion that the condition of the reflexes is a more reliable and a more delicate symptom of the progress and the exact location of the tabetic process than the sensory disturbances.

Hypertrophic Myopathy Following Typhoid Fever.— BABINSKI (*Revue Neurologique*, December 30, 1904).—This is an interesting contribution to the subject of diseases of the muscles, a subject which is at present in a very important stage of development. The case was that of a woman, aged seventeen years. Following an attack of typhoid fever some four years ago, there developed a stiffness and a difficulty in moving the right arm. The paralysis was in no sense complete, but extension of the hand was impossible. The electrical examination showed a lessened degree of Faradic and galvanic excitability. The case then is a myopathy of the upper right extremity as a result of typhoid fever having in all probability a peripheral origin. This myopathy can be called hypertrophic because there was a dissociation in the normal activity of the group of muscles affected as, owing to the enfeeblement of some, there resulted a state of hyperactivity in the others, producing the usual condition of hypertrophy.

GENITO-URINARY SURGERY.

IN CHARGE OF

H. McC. JOHNSON, M. D.

The Use of the Cystoscope in Cases of Prostatic Hypertrophy.—YOUNG (*Bul. Johns Hopkins Hosp.*, November, 1904).—For viewing the hypertrophied prostate, Young finds the various retrograde cystoscopes to be unsatisfactory, and prefers the simple cystoscope. He has had constructed a chart, consisting of circles, in which the findings of the different views obtained through the simple cystoscope in eight different positions may be recorded. He illustrates the shapes the prostatic urethra may present when distorted by different varieties of prostatic hypertrophy; also, the cystoscopic pictures of the various forms of hypertrophy, and describes the numerous ways of manipulating the instrument in order to properly view the prostatic enlargements.

Luys' Instrument for the Intravesical Separation of the Two Urines.—VALE (*Ann. Surg.*, January, 1905).—The author considers the earlier attempts at urine segregation, illustrating the instruments of Lambotte and Neumann. The principle, however, of the Harris instrument was a new one and entirely original with him. The Luys instrument is amply illustrated, and its method of application described. The author calls attention to the advantages and disadvantages of ureter catheterization and segregation, and says that it is now apparent that each of these two methods of separation has a field of usefulness of its own, one supplementing the other. There are certain well defined indications for the ureteral catheter, but in a large majority of cases the instrument of Luys will be found sufficient to permit a rigorously precise diagnosis of the functional state of the kidneys and lay down the indications for operation. Separation of the two urines has extended far beyond its original indications. It is demanded in all cases of hematuria; in the early diagnosis of renal tuberculosis; in all obscure abdominal tumors as an aid in differentiating between involvement of the kidney and surrounding organs. Several cases are quoted in illustration.

Indications and Therapeutic Value of Prostatectomies.—PROUST (*Ann. des Mal. des Org. Urin.*, November 15, 1904).—Here we find a resume of Proust's article read at the eighth session of the French Association of Urology. He tells us that partial prostatectomies, such as the removal of a median lobe, are to-day almost completely given up. By the suprapubic method in this latter operation the mortality is high and the results indefinite. Because of these results from the partial operation, it is almost universally superseded now by total removal of the gland, which may be done by the perineal route or suprapubically, the combined method having been abandoned. He has collected 813 cases of perineal prostatectomy, with a mortality of 58, or 7.13 per cent. In considering the perineal method we have to take into account certain

complications which are special to this route, such as wounds of the rectum and difficulties or accidents pertaining to the urinary or genital apparel. Immediate suture of rectal wounds are followed by good results. The few cases of uro-perineal fistulæ that are observed may be prevented by careful incision of the urethra and close attention to the cysto-perineal drainage. Different forms of incontinence of urine have been observed after perineal prostatectomy. Some are slight, some grave, some temporary, and some permanent. Happily the temporary incontinence is the most frequent, and usually passes off within some months; but it is those cases of definite and absolute incontinence that are the black beasts of perineal prostatectomy—and usually come after the removal of very large prostates. Very rarely strictures have been noted to follow this operation. While orcho-epididymitis occurs, it is only very exceptionally that we meet with suppuration. Decline of the sexual power is almost a habitual consequence of perineal prostatectomy. For, as the operation is practiced, injury to the ejaculatory canal is almost certain, suppressing not only ejaculation but erection. However, the proposition of Young to leave a band of prostatic tissue, while not entirely preventing this complication, certainly makes it less frequent than does other methods.

Among the therapeutic results we see a diminution of the fever a few hours after the operation, infected urine slowly clearing up, digestive troubles rapidly disappearing, and an improvement of the general health following. Where there is a recent complete retention, we must not forget that there has been previously an unknown degree of incomplete retention, and, while the operation re-establishes spontaneous micturition, yet in about one-third of the cases there remains a slight degree of incomplete retention. In the complete retentions that are chronic, operation produces the most striking results. Urination is easy and spontaneous. Because of the necessary regular catheterization before operation, the bladder is not in a state of degeneration, and, once the obstacle is removed, the bladder contractility asserts itself. However, if there is any residuum which persists longer than a year after operation, it may be considered permanent, and is due to far-advanced lesions of the bladder, or to faulty technique. It is in the chronic incomplete retentions that the failures of prostatectomy are most frequent; yet even here complete cure may sometimes be obtained even in cases the least promising, and, though the residuum persists, operation renders the urine more clear and improves its general condition. The lack of improvement is due to the advanced bladder degeneration. The congestive troubles of the first period of catheterism are naturally much improved by prostatectomy, likewise the difficulties of catheterism in prostates much hypertrophied are diminished, and the hemorrhage (which may have been an accompaniment of catheterism before operation) disappears after it.

Calculi are easily removed during prostatectomy, and, above all, the operation renders their return improbable, although secondary calculi have been noted after prostatectomy. While it is true that a return of the urinary difficulties may, in some cases, occur either through the return of the obstruction or from malignancy, post-operative stricture, or degeneration of the bladder fibres, yet, on the contrary, most often the

longer the time after prostatectomy the greater is the improvement. Catheterism becomes less necessary, micturition less frequent, the volume of the diseased kidneys diminishes, and the general health improves, so that the patients have the appearance of rejuvenated old men.

Of the suprapubic prostatectomies there are two operations to be considered—that of total extirpation of the prostate, together with a portion of the urethra which traverses it, and that of subtotal extirpation with a para-urethral enucleation of the gland, the latter being the least dangerous and the operation of choice of the two. Two hundred and forty-four cases, with the mortality of twenty-nine (12 per cent.), have been collected, showing a greater mortality than that from perineal prostatectomy. While the mortality in the supra-pubic route is greater than that in the perineal, the post-operative complications are less numerous. Notably, incontinence of urine and decadence of the sexual power is not observable. The efficacy of supra-pubic prostatectomy is equal, if not superior, to the perineal. In cancer of the prostate, operation offers some hope, especially if the process be limited. As to operation for tuberculosis of the prostate or for chronic prostatitis, the future must decide.

The author here takes up in detail the indications for operation, and seems to prefer to operate only on those cases in which the catheter fails, or in which there are some special complications. He hopes that the future may enable us to diagnose malignancy in its early stages, so that operation may be more promising than in the past.

LARYNGOLOGY AND OTOLOGY.

IN CHARGE OF

WILLIAM E. SAUER, M. D.*

Tic-Douloureux and Other Neuralgias from Intranasal and Accessory Sinus Pressures.—SARGENT F. SNOW (*N. Y. Med. Jour. and Phila. Med. Journal*, January 14, 1905) states that many cases of tic-douloureux arise from intranasal and sinus pressure. The acute form, as seen by the author, frequently accompanies a cold with sinus accumulation, and passes away with abatement of the inflammation or by securing proper nasal drainage. The subacute form may present an equal degree of pain, but does not clear up with the removal of nasal obstruction. It starts anew upon slight provocation, showing that a proper outlet must be made from an affected sinus or some nasal pressure demands relief. With the chronic cases any or all internal sinus morbid states, from pus, granulations and polypi to diseased bone, may be expected, and in these chronic cases a most patient, thorough clearing out is the only hope. From the author's experience it would seem that a pain shooting from the bridge of the nose outward and upward indicates an involvement of the anterior ethmoids. A deeper and more intense pain under or behind the eye, and sometimes apparently in the ear or temple, points to

the middle and posterior ethmoids; while a still deeper, splitting pain, radiating outward from the center, sometimes reflected around the anterior third of the lower jaw, is relieved by opening the sphenoid. Accumulations within the maxillary antrum are diagnosticated by the localized pain, with sometimes intense muscular tremor and successions of spasms, shaking the head from side to side. The writer has succeeded in relieving twenty chronic cases of tic-douloureux in the past seven years by treatment directed to the nose and its accessory cavities.

Acute Septic Inflammations of the Throat and Neck.—Sir FELIX SEMON (*Brooklyn Medical Journal*, January, 1905) calls attention to the confusion in the medical terminology of the acute septic inflammations of the throat and neck. He believes that the diseases which are now known as acute glossitis, of edematous pharyngitis and laryngitis, of acute edema of the larynx, of abscess of the larynx, of phlegmonous pharyngitis and laryngitis, of erysipelas of the larynx and angina Ludovici, should be, from an etiological point of view, classified under one heading, viz., acute septic inflammations of the throat and neck, thereby greatly simplifying matters, the main symptom in all of the above mentioned diseases being the same—that is, inflammation with a large amount of edema. This inflammation can be brought about by any of the various forms of staphylococci and streptococci, bacterium coli, the bacillus pyogenous fœtidus, the tetragenous pyocyaneus, and others. The present terminology is based only on the particular location of the infection and the beginning of the process. He also calls attention to the seriousness of these cases, with their usually rapid and fatal termination. He advises a bacteriological diagnosis when possible, though, owing to the rapid course of the process, it is often not practical. He mentions one case of his own and some of De Sante's which were saved by the injection of antistreptococcus serum, which should always be given a trial, as no danger can come from its use if the process be the result of some other infection.

Tuberculosis of the Mastoid Process in Children.—HENRICI (*Zeitschrift fuer Ohrenheilkunde*, Band 48, Ergansungsheft) reports in detail eight cases of tuberculosis of the mastoid process in children, and gives in a tabulated form the findings in nineteen mastoid operations in cases ranging from two months to seven years of age. He concludes from these findings: 1. Tuberculosis of the mastoid is a relatively frequent disease in childhood, about one-fifth of all cases of mastoiditis in children being tuberculous. 2. Tuberculosis of the mastoid in childhood is, in the majority of cases, a primary tubercular ostitis; that is, the infection is carried by the blood. 3. A primary tubercular mastoiditis is more frequent than a secondary one following a tuberculosis of the middle ear. 4. Tuberculosis of the mastoid in childhood is more often a purely local and relatively benign affection. 5. Usually all of the diseased tissues can be removed by a simple mastoid operation. In only a few cases will the radical mastoid operation be necessary. 6. A positive diagnosis of tuberculosis of the mastoid can rarely be made by the macroscopic appearances at the time of operation. The microscope will

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OPHTHALMOLOGY.

IN CHARGE OF

JOHN GREEN, JR., M. D.

Operative Treatment of Senile Ectropion. — TERSON (*Ann. d'Oculist.*, November, 1904).—The first step in the operation consists in excising the strip of reticulated conjunctiva from the outer to the inner commissure. A triangular area of skin adjoining the external angle is then excised, the base of the triangle being at right angles to the palpebral fissure. A suture is passed through the centre of the base of the area, and two or more lateral sutures are then inserted. The triangle excised is upward and outward. Terson advises against any interference with the tarsus or the placing of conjunctival sutures. For several days prior to operation the skin at the outer angle is softened by inunctions of lanoline and vaseline oil.

The operation is not applicable to ectropion due to facial paralysis, to cicatricial ectropion, or to ectropion *sclerodermique*.

Posterior Cortical Cataract of Traumatic Origin.—C. KOLLER (*Arch. of Ophthal.*, January, 1905).—A perforating triangular flap wound of the cornea was followed by the development of a delicate star-like opacity at the posterior pole. In addition there appeared a very small anterior capsular opacity corresponding to the inner angle of the corneal wound, and a somewhat diffuse, bean-shaped opacity in the anterior layers of the lens.

The distinction between posterior *polar* and posterior *central* cataract should be borne in mind. The former is wholly without the lens, is congenital, and owes its origin to incomplete involution of the central hyaloid artery. The latter is *within* the lens, is larger, and assumes a star shape in conformity with the lenticular structure. Posterior cortical cataract is very common in degenerative affections of the deeper structures of the eye, but is rare after traumatisms. It occurs sometimes after penetrating wounds; again merely after simple contusion, without tearing of the lens capsule or suspensory ligament. The size of the anterior lenticular lesion often bears no relation to the size of the posterior lenticular opacity, which may develop into total cataract, but which usually clears somewhat and then remains stationary.

The most plausible explanation is that of Zur Nedden, who assumes that there occurs a momentary displacement within the capsule leading to a loosening of the attachments of the lens fibres, and permitting fluid from the vitreous to enter between the lens fibres.

Treatment of Separation of the Retina by Subconjunctival Injections of Saccharine Solutions.—DIANOUX (*La Clin. Ophtal.*, December 10, 1904).—Four to five c.c. of a solution composed of sodium chloride one gram, cane sugar four grams, and distilled water one hundred grams, is injected subconjunctivally in the direction of the bulbar equator. The

resulting large chenosis is reduced by massage and a pressure bandage. The injection is repeated on the second day, and again on the fourth or fifth. The eye is examined after the third injection. If there is no improvement, the treatment is discontinued. If the separation has disappeared or has notably diminished, the injections are continued in decreasing doses. Not more than ten injections are given in all. During the treatment eserin and pilocarpin are used as adjuvants.

Cases of Retinal Separation.—A. GREENWOOD (*Ophthalmology*, January, 1905).—The author's cases are divided into four groups: (1) Retinal separation occurring in highly myopic eyes; (2) retinal separation dependent upon choroidal neoplasms; (3) retinal separation occurring during a retinitis of pregnancy; (4) idiopathic separation of the retina. With reference to treatment Greenwood believes that very few cases of retinal detachment are suitable for operation. Primary reattachments in the myopic cases are usually not permanent. Detachments due to tumor demand, of course, enucleation. Detachments the result of the retinitis of pregnancy become reattached without operative or other interference. Idiopathic and traumatic cases are most amenable to treatment. Subconjunctival injections of salt solutions combined with scleral puncture and cauterization give the best results.

Enucleation with the Aid of Raspatory, Followed by the Insertion of a Skin-Fat Flap.—ROLLET (*La Clin. Ophthal.*, December 10, 1904).—The conjunctiva around the cornea is divided as in the ordinary operation. The recti muscles are then caught up on a strabismus hook and separated from their scleral attachments with a raspatory. Sutures are then passed through each. The obliques are separated in the same manner, and finally the optic nerve is divided.

A circular area of skin, the diameter of which is a little greater than the diameter of the cornea, is dissected up from the deltoid region, along with its subcutaneous cushion of fat, transferred to the socket and sutured to the recti tendons with catgut. There is thus formed an island of skin surrounded by conjunctiva.

The advantages of this procedure are twofold. In the first place the stump is reinforced and, secondly, a new attachment is afforded for the recti muscles, thus insuring greater mobility for the artificial eye.

The Importance of Testing the Ocular Muscle Balance for Near as well as for Distant Vision.—S. THEOBALD (*Bulletin Johns Hopkins Hospital*, January, 1905).—The writer points out the frequent discordance between the behavior of the muscles in distant and near vision. The normal state of muscle balance at thirteen inches, as determined by the vertical diplopia test is from 2 to 4 degrees of exophoria. Recently Theobald has noted differences in the vertical muscle balance for far and near, a difference apparently bearing a distinct relation to asthenopia.

SOCIETY PROCEEDINGS.

ST. LOUIS SURGICAL CLUB.

Meeting of November 8, 1904.

The meeting was called to order 9:00 P. M., President Dr. William S. Deutsch in the chair.

SEPSIS POST-ABORTUM.

Dr. Ernst Jonas read a paper with the above title, for which see page 178.

Discussion.

The president said that he had been so fortunate as to be present at this operation, and was very favorably impressed with the accurateness with which Dr. Jonas found the pus. It was not a palpable pus sac as is usually found, but the doctor had mapped out the area by careful study of the conditions, and it was really surprising how precisely one could go into that region and find such a small quantity of pus.

Dr. John Young Brown considered the case reported by the essayist one of exceeding interest and congratulated him upon the result, and especially upon the manner in which he had treated the case in the early stages of the infection. The speaker believed such cases should be treated with a dull curette, rather than with the sharp instrument. Where the uterus is small, the finger was better than either. In regard to the virulence of the case reported, it was of the character generally seen in cases of the so-called "virgin sepsis." It had been pointed out by Tate that puerperal infections in primipara were more virulent than in multipara. As to the use of the streptococcus serum, he agreed with the essayist that it had little or no effect. He had used it at the City Hospital many times, but had been unable to see any definite action from its use. He felt that an autopsy would have been of great interest in this case, as it would have demonstrated exactly where the abscess was located. In his experience he had never seen a case of so-called pelvic cellulitis. In over two hundred cases of pus in the pelvis operated on by him in the last year, the infection invariably began in the vagina, extended to the uterus and then out into the tubes. In the autopsies he had found the same conditions existing as they also existed in the work he had witnessed done by other operators. He had recently operated on a double pus case following an abortion. The woman had a stormy voyage through a virulent streptococcus infection, streptococci being demonstrated in the uterine scraping, as well as in the blood. She developed a wide peritonitis and two pus tubes were enucleated through the abdomen; patient was drained with glass and recovered. He believed that in all cases of puerperal sepsis it was extremely important to examine, not only the uterine and vaginal secretions, but also the blood. This was a routine practice at the City Hospital. He did not believe the Pryor operation a justifiable procedure, unless there was present a palpable lesion. He had done this operation three times, but did not think well of it.

Dr. John Morfit reported a case in which the conditions were similar. He stated that he had discarded the use of the antistreptococcic serum two or three years ago, after giving it a strong trial in every case that came under his observation up to that time. The accuracy with which Dr. Jonas has located the abscess in this case showed most careful watchfulness and study.

Dr. V. P. Blair said that the most interesting thing about Dr. Jonas' case was the active way he kept at it. That was the way he got his results. Dr. Blair had recently seen a case of extremely virulent infection twenty days after confinement. The husband admitted having been infected and thought he had infected his wife. Hesitating to cut out the uterus he placed two catheters in the cavity of the uterus and irrigated con-

tinuously with hot water for three days, with great improvement of all symptoms; later he made an incision back of the uterus and let out the pus. Though he did not see the case after that, he understood that she made a good recovery. He did not believe the infection was gonorrheal, for the symptoms were not gonorrheal. After seeing her the urethra sloughed out. In this, as in most streptococcus infections, there was the characteristic stoney, hard, induration. He had treated one streptococcus puerperal infection coming under observation in the subacute stage, with antistreptococcus serum with apparent help and no evident suppuration following.

Dr. Willard Bartlett felt that Dr. Jonas was to be congratulated that he got the patient well. It was still something of a mystery to him in spite of the doctor's vigorous work. His experience had been that when a streptococcic infection becomes general the patients die. He had a case of general streptococcic infection develop following a Scheede operation for varicose veins of the leg. Three hours after operation the patient had a temperature of 103, the next morning he had a temperature of 105, and three days later he had a temperature of 107.5. There was a thrombo-phlebitis of the internal saphenous vein. These symptoms continued for two weeks, the temperature varying from 105 to 107, the patient taking no nourishment and all of the time delirious. The ulcer, however, had healed when he died. Dr. Bartlett called attention to the misnomers in the terms septicemia and pyemia as commonly used. A German surgeon named Myer had given the nicest classification of terms for blood poisoning that he had ever heard. Myer said call all these a mycosis, then, when there are metastatic abscesses, call them a tissue mycosis; on the other hand, if there is a development of germs within the blood stream, call that a blood-mycosis, a strepto-mycosis or a staphylo-mycosis, as the case may be.

Dr. Chas. H. Dixon said that in Dr. Jonas' case there was one point that he thought was deserving of greatest praise, and that was the accuracy with which he had located the pus. The amount of pus was not more than a tablespoonful, and it was accurately localized. He wished the doctor would tell them what the outcome was following those chest aspirations, as he did not say whether the lung responded or not.

Dr. Francis Reder had come into contact with quite a number of cases of sepsis following abortion. There were frequent and severe chills and high temperature, and he had had recoveries without any operative interference. The reason there was no operative interference was because the pus focus could not be located. Fortunately, the constitution of these patients was strong enough to enable them to overcome the septic condition. He had also had some deaths in cases of sepsis following abortion. It was reasonable to believe from anatomical facts that these abscesses would be found in the broad ligament about the region of Poupart's ligament, or, next in frequency, in the median line midway between the umbilicus and the pubic bone. In such cases he would feel inclined to resort to operation, but thought he would enter at the anterior fornix and endeavor by blunt dissection to find the way into the pus focus. Dr. Brown said that he had never seen a case of pelvic cellulitis. The speaker believed there were cases of parametritic infections of secondary origin that often were nothing more than a pelvic cellulitis.

Replying to a question by Dr. Reder, Dr. Jonas said that the pus cavity was in the broad ligament.

Dr. Reder recalled a case under similar conditions where he accidentally got into the pus cavity. He opened the anterior fornix of the vagina, and by blunt dissection found the pus. This was in puerperium at full term. The baby was seven weeks old and the patient markedly septic when he saw her. The doctor had said that this was an easy dissection, and that he did it under cocaine. He did not believe the doctor had found a very edematous condition in his case if it proved one of easy dissection. It was not always easy, although he had met with inflammatory conditions where such a dissection was comparatively easy, where the peritoneum could be peeled off without any difficulty, giving good access to the region of the iliac vessels.

Dr. Jonas, in closing, said that he purposely selected a case of rather frequent occurrence in order to bring out the important points mentioned in his paper. Several members of the society had seemed to think the dissection hard, but it was suprisingly easy. He did not see why it should be hard, since there was no inflammatory attachment of the peritoneum. Had the abscess developed a good deal further, the anatomical dissection would have been harder. To reach the pus cavity was comparatively easy, because the inflammatory condition was not yet far advanced. He had learned from Dr. Brown's remarks that virgin infections are frequently more severe than infections in women who have borne children. As to the anti-streptococcic serum, he, too, had no great faith in it, and the main reason for using it in this case was that it was a charity case, and he did not want to leave anything undone. As to Dr. Brown's statement, that there is no such thing as a pelvic cellulitis, he thought Dr. Brown had meant that there is no genuine case of primary pelvic cellulitis, and in this he agreed with Dr. Brown perfectly. The infection must, of course, come from some part of the mucous membrane of the genital organs. In this case it came from the uterus. He believed the infection did not migrate through the tubes, but penetrated through the uterine wall along the lymphatic vessels of the uterus. If the infection had passed through the tubes there would have been more disturbance palpable in them, but there was not the slightest thickening in that part of the body. The only difficult thing was the diagnosis; after that there was nothing very hard. The only question was, was the diagnosis correct? There was nothing felt except some fixation and resistance. So far as Dr. Morfit's case was concerned, he believed that he would have treated the case differently. A uterus so badly damaged should be removed. It would be much easier to drain the infected area after removing the uterus, having a wide space for drainage. With regard to the nomenclature, he thought Dr. Bartlett need not be troubled. All these cases could go under the head of sepsis, and the man who knows his pathology could make the differential diagnosis between the different kinds of sepsis. As to Dr. Dixon's question, the lung responded very well, but slight adhesions being noticeable.

ECTOPIC PREGNANCY COMPLICATED.

Dr. Charles H. Dixon reported a case of ectopic pregnancy and ruptured ovarian cyst. One Sunday afternoon Mrs. V., who had been in good health and who had enjoyed a hearty dinner, was taken with a very severe pain in lower abdominal region. A physician in the neigborhood was called, and thought it was a case of severe intestinal colic. Her regular physician saw her four hours later, and he thought there was a rupture of the appendix. Dr. Dixon saw her at eight o'clock in evening. She was anemic, cold, clammy, fainting, almost pulseless. He gave a diagnosis of rupture of a tube with a hemorrhage. She had been married four years, had one child three years old and a baby a little over a year old. After the birth of her second child she had menstruated twice, and then in August she had a profuse menstruation. She missed the first part of September, and attack was on the 10th or 12th, or about three or four days over her time of sickness. She was taken to the hospital, and as it was impossible to get an ambulance she was taken in a carriage, and when she arrived at the hospital was pulseless. She was operated upon at once. The abdomen was full of blood, profuse hemorrhage going on, and after getting the right tube up, the rent was found in the tube. The uterus was found adherent posteriorly. The adhesions were broken up and the bleeding stopped. After that, in mopping out the cavity, he was surprised to find that the bleeding continued, but from the left side, and found a ruptured ovarian cyst about the size of half his hand. The bleeding from the ruptured cyst was profuse, and he had to ligate the vessels. The patient made a good recovery. He had three of these ectopic pregnancies inside of a month, and strange to say, they were all on the right side. He could recall six such cases, all on the right side.

LIGATION OF COMMON CAROTID.

Dr. John Morfit presented a specimen showing the ligation of the common carotid artery following laceration of the internal carotid and the three branches of the external carotid and the internal jugular vein. The patient lived four and a half days after the ligation and died of cerebral edema. He saw her fifty minutes after the accident had taken place. She was pulseless and almost unconscious. Upon turning her head there was a gush of blood which was controlled by forceful packing. There was some improvement within the next fifteen hours and the artery was then ligated.

TYPHOID PERFORATION.

Dr. John Young Brown reported a case of typhoid perforation. He said that the patient had come to the hospital the early morning of operation with history of having been sick three weeks. He had been treated at the dispensary. On examination a diagnosis of possible typhoid perforation was made. Operation was immediately done. Incision was made through the outer border of the right rectus muscle, the appendix was found very acutely inflamed; the pelvis was full of pus. A number of coils of small bowel were found acutely inflamed. About ten inches from the ilio-cecal valve two typhoid perforations were found and closed. The pelvis was full of filth; a glass drain was inserted and also two gauze drains, the wound closed with through and through silkworm gut sutures. When patient went on the table his temperature was 103.8°, pulse 120. The evening after the operation temperature had dropped to 100.8°, pulse 106. While it was too early to give a prognosis in the case, the patient's condition seemed favorable and he hoped to report it in full at the next meeting of the society.

Meeting of December 14, 1904.

ESOPHAGEAL STRICTURE.

Dr. John C. Morfit presented a paper with the above title, for which see page 183.

Discussion.

Dr. Malvern B. Clopton reported the case of a child about the age of Dr. Morfit's patient. The child was presented at St. Luke's about four weeks after the lye had been taken. The stricture was about two and a half inches above the stomach. The child was able to eat only very soft foods and fluids. It was fed for a few days on milk and fluids, albumen water, etc., and gained considerably. But the mother was compelled to stay at home, and she refused to allow the child to remain at the hospital. It was kept at home for about two weeks, and when it returned to the hospital it was impossible to get anything through except a small filiform. By going in twice a day it was gradually dilated, and again the mother took the child home. Three weeks later it was brought back terribly emaciated. The filiform would not then go through. After three or four attempts at swallowing, the child began to take some milk; then a filiform was gotten through, and it was possible to dilate it again. Dr. Mudd had been absent from the city and about this time returned. He had the child anesthetized, and attempted to pass a small, soft bougie. An olive-tipped esophageal sound with a whalebone handle was then used, and with no apparent effort it slipped by the stricture. The dilation was then carried on to about one-fourth of an inch. The child did well for three days, and was taking its food excellently, when there was some disturbance and fever began to rise. There was a filling of the pleural cavity on one side, and it had to be opened. About a quart of fluid and food was found. The child died shortly afterward. Practically a new ulcer had formed where the stricture was, the necrosis about the esophagus was considerable and led into the plural cavity, resulting

in the child's death. The opening in the esophagus at the autopsy was found not as large as a slate-pencil. Practically everything administered after the third day had gone into the plural cavity, not into the stomach, proving that instrumentation may be very dangerous sometimes.

Dr. Willard Bartlett said it was a singular fact that a perforation in an esophageal dilatation not only caused pleuritis, but also gangrene of the lung. His experience had been limited to three cases in the living and quite a number found at autopsy. Two were benign strictures. One had been treated partly by himself. One case treated by a prominent physician in 1893 resulted in a damage suit. The patient made such an excellent recovery that, years later, the doctor used pictures of the half-grown girl in connection with his published report of the case, to which the family objected. The second case the speaker had treated about five years ago. Dr. Witherspoon had done a gastrostomy. The esophagus had to be dilated once a week, and Dr. Bartlett saw her about eight months after the original operation. The dilatations were being continued at that time. She got so that she could swallow everything and was in good condition. The third case was one of malignant stricture, which he had seen about a year ago. After a few examinations had proved the impossibility of passing anything but a small olive-tipped bougie, operation was proposed and refused, so that nothing further had been learned with regard to the case.

Dr. Deutsch had hoped the essayist would bring out what the x-ray showed of these esophageal strictures. Some congenital conditions are very clearly seen by it. He wondered if any one had tried the sawing method, with catgut from the mouth to the stomach. If there was any possibility of these ulcers occurring as readily as in Dr. Clopton's case, that might be a very dangerous procedure on account of it producing bleeding.

Dr. Ernst Jonas called attention to the danger of instrumentation. In Berlin a gentleman came to the clinic with a typical complaint of esophageal stricture. A student attempted to make out the location and degree of the stricture, and put in a small bougie; there was a rush of blood and the patient was lying dead on the floor. It was a case of aneurism, and the stricture was due to pressure of the aneurismal sac. Strictures of the esophagus sometimes improve without instrumental dilatation, even though they may be very marked. In the Martha Parsons Hospital he had seen a baby about six months old that could hardly swallow water; most of it would be regurgitated, only a little being swallowed. About a year after he had first seen the child it could swallow ice-cream and soft foods without difficulty. He had let it alone, thinking that if the stricture became more complete he would perform a gastrotomy. Of all operations for stricture of the esophagus the most simple is gastrostomy. If the stricture is in the cardiac region, it might be advisable to make the operation in two steps, as Dr. Morfit had done. If with this be combined the sawing method, it would seem to be about all that could be done. All wounds in the esophagus should not be completely sewed up. Drainage must be established.

Dr. C. H. Dixon had seen three cases of stricture of the esophagus within the past three years, in two of which gastrostomy was performed, and in one of them there was nothing done after the gastrostomy except feeding. Two years later the child was stout and healthy, and the opening into the stomach was but a fistulous tract. Another child was operated upon at the clinic, gastrostomy being done. Three days after the operation it developed measles and then had a severe double pneumonia. It got better of that, and two weeks later bougies were passed and dilatation was kept up regularly for three months; then all trace of the child was lost. Pickett reports a case in which a bougie was introduced carefully, and, striking the point of stricture, they could see pulsation at the end of the bougie, and made a diagnosis of aneurism from this pulsation. A case was reported by Jungnickel of a child two and a half years old who developed stricture after diphtheria. The stricture persisted during convalescence. Operation showed two strictures, one at level of thyroid and one 12 cm. below. It was

supposed to be due to the diphtheritic membrane coming away, contraction of scar tissue resulting.

Dr. John Young Brown was specially impressed with the remarks of the essayist in regard to rectal alimentation. He concurred fully in the view expressed, and entered a vigorous protest against delay in cases of this character when patients were starving for want of proper nourishment. He believed that stricture of the esophagus, both malignant and benign, demanded early gastrostomy. In benign cases gastrostomy enabled the surgeon to practice retrograde dilatation and to nourish patients through the fistulous opening. In maglignant cases patients were made more comfortable and life was greatly prolonged.

Dr. Willard Bartlett, in reference to rectal feeding, called attention to Dr. Murphy's statement, that a man kept up by rectal feeding lives about as long as a man who does not receive such treatment. Dr. Barck had reported a case that lived eight weeks with only rectal alimentation, but a man can live about that long on water alone. The so-called Nassilov operation was first proposed in 1888, and Rehn, a surgeon of Frankfort, was the first to try it on the living in 1898. The operation was done on the back, working through to the esophagus from behind. A few foreign bodies have been successfully removed in that way.

Dr. Morfit, in closing, said he could not conceive of any advantage in a trans-plural or trans-thoracic operation over a simple gastrostomy. The relation of the esophagus to other vital parts behooves the surgeon to exercise every care in assuming any risks. He believed the average surgeon could attack the esophagus anteriorly, posteriorly or diaphragmatically, but he could not see that these dangerous operations had any advantage over the operation usually done. An operation for malignant growth did not offer any advantage over feeding the patient through a fistula. These cases reach the surgeon late, they come with conditions more easily prevented than cured, and for that reason he had laid emphasis on the oil feeding. There is almost no mention of it in modern text-books, and but little is said of it in the older ones. One modern text-book says to moisten the bougie with a little water. The oil is nourishing, and it enables particles of food to pass readily. Most of the cases that recover are in children. If the slightest amount of nourishment can be gotten through there is hope, but if even water cannot pass the child will succumb as quickly as a grown person. The reason why children recover is that the tube is getting relatively larger with the child's growth, though the cicatrix, unless it is annular, is stationary. Cutting the stricture he believed to be absolutely and dangerously uncertain, and there is no reason to promise or expect anything from such an operation to warrant taking the risks involved. The possibility of an aneurism causing obstruction has been alluded to in most works on the subject. Examination for aneurism is advised. He could not see that the x-ray would be of any practical use. It would locate the stricture, but would not show the caliber. If something could be gotten through it might be possible to gauge the extent, but practically it would be of no use.

The sacculation might be filled up with mercury or bismuth, and a skiagraph taken, but it would be of no material aid. The method of putting in a funnel-shaped tube (permanent intubation) presupposes dilatation. It is impossible to get in one of these tubes until a passageway has been effected by means of a bougie. The matter of stoppage of these strictures by food particles should engage attention. One case here in St. Louis was to be operated upon before a class of students, when suddenly a particle of food was coughed up, and the patient was then able to swallow water, nourishment could be taken and the child got well without operation. Irrigation before examinaton was a procedure that the speaker felt should be impressed upon the physician by the case mentioned and by his own experience with case No. 1, reported. As to the effect of rest on strictures, the conditions in the esophagus and urethra were analogous. In the case he had operated upon the patient, two days before death, was able to swallow a little milk, and the day before his death he vomited food that had been put in through

the tube, proving the perviousness of the esophagus. As to the possible relation between the gangrenous condition in the lung and the stricture, he felt it could be nothing more than a coincidence. The question had suggested itself to him: Was there any effect of the caustic upon the adjacent structures, something more than the local effect of this lye? The stricture was certainly very extensive, and involved more than the internal muscular layer of the esophagus.

Resection of Small Bowel.

Dr. John Young Brown presented this specimen. The patient had a gunshot wound in the abdomen and his condition was quite bad. The abdomen was opened, and after the usual search there were found six perforations of the bowel and nine of the mesentery. The mesentery was considerably damaged. Six feet of the small bowel were resected. Anastomosis was made with the Murphy button. The button was passed on the twenty-sixth day. This case was irrigated and drainage made by means of a glass tube in the pelvis, placed through a stab wound above pubes.

Peritonitis.

The second specimen was evidently a wide-spread peritonitis. He had a pulse of 130 and was in bad shape. An incision was made through the outer border of the right rectus muscle and the appendix was found perforated at its base. The pelvis was full of filth and pus. The appendix was tied off because it could not be buried, though he did not favor this method of dealing with the stump, as a rule. The ideal method was to get the appendix entirely out and to close the wound as a gunshot wound, or crush it an bury the stump with a purse-string suture. He had rarely found it necessary even to cauterize. In this case nothing more was done except to remove appendix and drain. The glass drain was placed in the recto-vesical pouch and the patient put up as soon as possible.

Pus Tubes.

The third specimen, two large pus tubes, were presented merely as a curiosity to show their size. It was a gonorrhœal infection and the patient had gone through the various stages of boroglyceride tampon medication, etc., during the past six years. The tubes were taken out and the patient recovered.

Dr. Blair, referring to the turning in of the end of the appendix, mentioned the case of a woman who had bled to death as a result of turning in the appendix.

Dr. Clopton said that there were cases where the angiotribe did not stop the bleeding.

Dr. Bartlett said that when in Rochester last February he noticed that Dr. Will Mayo did a circular purse-string operation, using a clamp and ligating the appendix with catgut, but his brother did not. He asked Dr. Will Mayo why he did this inasmuch as his brother did not *tie off the appendix*, and the reply was he had a woman bleed almost to death and his brother had not had that experience.

Dr. Brown said that every time he opened an abdomen he took out the appendix if it was convenient. In all such cases he clamped off and buried them with purse-string sutures.

Dr. Bartlett said that the main idea in draining these cases seemed to be to drain off the thyroid secretion and not drain off the blood.

Dr. Clopton stated that plain rubber tissue rolled up and used as a drainage tube leaves just the hole and no accumulation about it, so that it proves most satisfactory.

Sarcoma of Inferior Maxilla.

Dr. M. B. Clopton reported a case of sarcoma of the inferior maxillary. The woman had come to him two days before. He cut out a little wedge-shaped section for exami-

nation and it proved to be a large spindle-cell sarcoma. He operated the next day. There was nothing unusual about the operation except that he removed the bone without making a perpendicular incision through the lower lip, making a semilunar submaxillary incision, in order to prevent disfigurement.

Dr. Bartlett said the perpendicular incision does not disfigure in all cases. He had seen a man in whom union was so perfect that one could not tell where the incision had been made.

Meeting of January 11, 1905.

SILVER FORK FRACTURE.

Dr. Nathaniel Allison read a paper on this subject, for which see page 188.

Discussion.

Dr. M. B. Clopton thought the most striking thing was the success of operation in the second case for the picture taken before showed the epiphysis displaced; after the operation it showed that while the osteotomy was well up on the bone the correction seemed to be perfect. He presented some plates to show that fractures near the lower end of radius were difficult to diagnose. The first plate was that of a woman of fifty years who fell in the typical manner for Colles' fracture. When first seen he considered it a sprain of the wrist, but later found that she had a transverse and longitudinal fracture of the bone. The next plate was that of a child. There was no deformity but a good deal of pain. X-ray showed a subperiosteal fracture of radius. In both cases there was a good deal of pain but deformity in neither. He also had an interesting picture of a longitudiual fracture of the phalanx due to a book having fallen upon the finger.

Dr. Ernst Jonas has seen a great many such fractures in Prof. Bergman's clinic, and the best results were obtained when put up without any splint, just in plaster of Paris. The arm was held firmly by an assistant, the hand with thumb upward between pronation and supination. There was made a severe pull on the thumb and the hand bent extremely to the volar and ulnar side. This dressing was left on for about two weeks, after this frequent change of dressing. Good results were the rule, a bad function the exception.

Dr. C. H. Dixon said that a dressing he had heard referred to a number of times by Dr. Steele was one used by Dr. Moore; of Rochester, with good results. He used a piece of tape around the wrist, then supported the arm by a similar piece of tape, allowing the arm to rest at the site of fracture, the weight of the hand holding it in the proper position.

Dr. Clopton said he had seen some of the cases treated in that manner and the results were very unsatisfactory.

Dr. John Morfit thought the observance of the case had as much to do with the successful result as anything else. He sometimes started with an anterior splint, and on the second or third day used a posterior splint, or again he would use a plaster dressing. By watchfulness of the case during the first ten or twelve days one could mould the radius satisfactorily. The classical pistol position he was opposed to because it was most painful and had no advantage over a straight posterior or straight anterior. He did not see why Dr. Allison would not undertake it for cosmetic reasons. In the case of society women, for instance, it might be a matter of considerable importance to correct the deformity. Often the x-ray would show considerable displacement when the correction was apparently good. This is easily understood if we remember that skiagrams are shadows and not photographs. Dr. Allison had taken up the correction of this deformity. He dealt with a condition rather than its cause, although the importance of its prevention was not underestimated. The success of his method of correcting the deformity warranted its employment in most cases.

Dr. M. B. Clopton said the main thing was the initial reduction. When one had

gotten that, half the battle was over. He used the straight posterior and straight anterior splint and had gotten excellent results. He believed that Dr. Morfit's statement was correct, that the case must receive frequent attention. While an interne at the hospital he had seen two nasty contractures of the forearm due to the use of plaster of Paris. Almost every young practitioner thought the thing to do was to use plaster of Paris. The patients would go out and perhaps would not return to the hospital for ten days, in the meantime the pain of the first two days would have entirely subsided. Then one would not notice anything particularly wrong, but later the ischemic contraction would begin and in two cases the arm became practically useless. For this reason he did not use plaster of Paris dressing on a fresh fracture of the wrist.

Dr. V. P. Blair had brought with him two arms from the dissecting room, thinking they might be of interest. A point that Dr. Allison had mentioned was the drawing forward of the radius by the pronator radii teres, passing from the condyle to the shaft it would help to pull the upper end forward. The pronator quadratus extended up farther than was generally thought to be the case. In cases when the triangular cartilage was not torn loose from the ulna there could be but little change of relationship between the lower end of the radius and the latter bone, but the radius at point of fracture could be drawn forward and inward and thus add to the deformity. Another muscle, the supinator longus, passing from the external condyle of the humerus down to the styloid process of the radius, might at least help to maintain the deformity. Falling with the hand dorsi-flexed and pronated, the lower end of the radius would be toward the mesial plane and the shaft would be directed down and slightly inward so that a vertical resistance transmitted through the first row of the carpus would tend to drive the lower end of the radius toward the radial side, farther helped by the scaphoid, which was most prominent and received most of the force, articulating on the outer (anatomically) part of the lower end of the radius. Further, the posterior border of the lower end extended down as a lip, the force transmitted to that lip through the dorsi-flexed carpus tended to send it back. When the shaft snapped the lower fragment was rotated in its attachments, the inferior, anterior and posterior radio-ulnar ligaments, the annular ligaments and lower part of the pronator quadratus, so that as the lower lip turned back the upper mass of the fragment was thrown forward and might drag the lower end of the upper fragment forward with it. The statement that the original violence was mostly responsible for the deformity was proved, he believed, by the slight tendency for the full deformity to recur after reduction.

Dr. Allison, in closing, said Dr. Dixon had referred to the use of a tape as suggested by Dr. Moore, who had written a paper on the subject in 1872. Moore was of the opinion that there was always luxation of the ulna, although that was a disputed claim. Thinking the triangular ligament at the lower end of the ulna was always ruptured, and that this was a condition which required special attention. Dr. Allison could not agree with this. As to Dr. Clopton's remarks on the treatment on Colles' fracture, such opinions cause much of the trouble with Colles' fracture: Surgeons and general practioners claim they always get good results by treatment with the anterior splint. If the cases were gone over the statements of Hamilton and Scudder, that half the cases show deformity, would be found true. Dr. Allison was opposed to the anterior splint used alone. It was likely to allow a relapse of the first reduction. Plaster is a thing not everyone can use. It should not be applied all around the arm, but in such a way as to hold the fragments and press them into position, the plaster affording a definite support. In the case of the child he had moulded the plaster before applying it. The extreme pistol position was so painful that he hardly thought the majority of patients could stand it. Replying to a question by Dr. Morfit he hardly thought anyone ever got an absolutely perfect result.

Dr. Blair called attention to Dr. Allison's remark, that a deformity in a young child was likely to increase with growth. The speaker believed that it would always decrease with growth.

Dr. Clopton and Dr. Blair disagreed with Dr. Allison on this point.

BOOK REVIEWS.

VORLESUNGEN UEBER ALLGEMEINE GEBURTSHILFE. Von DR. HEINRICH BAYER, Professor der Universitaet Strassburg. Verlag von Schlesier & Schweikhardt, Strassburg. (G. E. Stechert, in New York.) I. Band, Heft 1. Entwickelungsgeschichte des weiblichen Genitalapparates. Price, $2.00. I. Band, Heft 2. Das Becken und seine Anomalien, $2.50.

These two volumes form a part of a work on "General Theoretical Obstetrics," which, in seven volumes, will deal with the following subjects: Embryology of the Female Genitalia, Anatomy of the Pelvis, Physiology of Pregnancy, Labor and the Puerperium, and, finally, Diagnosis and Therapy in Obstetrics.

The first volume, devoted to the development of the genitalia during the fetal and post-fetal life, contains largely the results of the author's own investigations. The subject is presented in a clear and interesting form, so that even the student will have but little difficulty in informing himself on this somewhat intricate subject with the help of this book.

The second volume, on the pelvis and its anomalies, is distinguished by the same lucidity of diction. This work contains illustrations on special tables which fairly represent the highest achievement of modern lithographic art.

Our American text-books only too often neglect the theoretical side of obstetrics in their endeavor "to comply with the needs of the students," and it is, therefore, especially interesting to realize, after a careful perusal of the volumes before us, that even the purely scientific and theoretical part of obstetrics can be fully presented in a manner that, at least, should be within the grasp of the medical student of today.

"If somebody should ask me," says the author in his preface, "what advantage the practical obstetrician could derive from a knowledge of anatomical and embryological facts, I should refer him to the answer given to a similar question by that eminently practical man Franklin: 'Try to apply it in practice.'"

PROGRESSIVE MEDICINE. Vol. IV, December, 1904. A Quarterly Digest of Advances, Discoveries and Improvements in Medical and Surgical Sciences. Edited by HOBART AMORY HARE, M. D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College, of Philadelphia. Octavo, 374 pages, 79 Illustrations. Per annum, in four cloth-bound volumes, $9.00; in paper binding, $6.00; carriage paid to any address. Lea Brothers & Co., publishers, Philadelphia and New York.

The December issue of *Progressive Medicine* marks the final installment of this quarterly digest for the year 1904. It comprises a series of essays on diseases of the digestive and genito-urinary tracts, on the surgery of the extremities and a practical therapeutic referendum.

If we consider the enormous volume of medical literature published every year, its distribution in thousands of publications, the multitude of languages, it at once becomes obvious that there is a need of a resume of this literature presented in just the manner in which it is done in *Progressive Medicine*. It is desirable to keep the price of such a publication within the means of the average practitioner, and it was, therefore, a move in the right direction when last year the publishers announced that they would reduce the subscription price one dollar per annum. Now that the four volumes of the year have appeared, we regret to observe that this reduction of price was accompanied by an omission of the departments of Pathology, Physiology and Hygiene. We consider it extremely deplorable that either the editor or the publishers placed the value of these three departments so low that they could be omitted just for one dollar, or possibly they were excluded as simply theoretical branches of medicine, and, therefore, not adapted to the needs of the "busy practitioner."